

# DRACOPEDIA

A Guide to Drawing the Dragons of the World



William O'Connor

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William O'Connor



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Art from page 2:

**Valor's Peak**

Oil on paper  
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2002

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To convert	to	multiply by
Inches	Centimeters	2.54
Centimeters	Inches	0.4
Feet	Centimeters	30.5
Centimeters	Feet	0.03
Yards	Meters	0.9
Meters	Yards	1.1





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### ABOUT THE AUTHOR

William O'Connor began drawing and painting as a child. Monsters and myths were inspirational to driving him to study visual arts. The writings of Tolkien, the Arthurian Romances, as well as Dungeons and Dragons formed a fascination with dragons and the fantasy genre that lasted all his life. William attended Alfred University for fine arts, graduating in 1992 and become a full-time freelance illustrator. William has produced over three thousand images for publication for such companies as Wizards of the Coast, Blizzard Entertainment, Lucasfilms, HarperCollins, Doubleday and many more.

For more information about William O'Connor and to see his portfolio, visit: [www.wocstudios.com](http://www.wocstudios.com).

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# INTRODUCTION



DRAGONS HAVE FILLED THE IMAGINATIONS of humankind since the beginning of history. Fables, mythology and folklore are populated with the winged, scaly beasts that both frighten and delight us. Throughout history this amazing creature has captivated the minds of artists all over the world. Today the power and majesty of dragons are as fascinating as ever, and tales of dragons and their kind dominate the novels of authors, the canvases of artists and the screens of animators.

*Dracopedia* is an approach to the study and understanding of these amazing creatures from an artist's point of view. Anatomical studies, gesture sketches and painting demonstrations are all a part of the *Dracopedia*, as well as a natural and cultural history of dragons. For years artist William O'Connor has traveled all over the world studying dragons in their natural environment. Now this work is compiled for the first time into a single encyclopedic compendium.

## HOW TO USE THIS BOOK

For thousands of years dragons have been depicted in paintings, drawings, woodcuts, sculptures and every form of art imaginable, and in every culture. The dragon is the most universal creature in history. Dragons are the most well-known creature in the world, and yet, they only exist in the mind of the artist.

*Dracopedia* is an artist's reference guide and workbook for creating, designing and visualizing all types of dragons. By examining thirteen individual dragon families, the concepts, design drawings, stages of the painting process, and by using historical and natural references as a guide, it is my hope that artists of all experience levels, gamers, writers and dragon enthusiasts alike will find inspiration and ideas of their own in these pages.

Each chapter in the work is divided into two parts. The first part involves the concept stage, where through a series of pencil-and-paper sketches, designs, historical reference and environmental studies, the dragon is worked out in detail. Once this is completed, a full-color painting demonstration is executed of the animal. Although these paintings are executed digitally, the concepts contained within them apply to all artists using any medium or application.

### Fire and Water

Oil on panel  
36" x 24"  
(91cm x 61cm)  
2004

# DRAWING MATERIALS

The most important tools are no more than a simple notebook and pen or pencil. With these you can perform anatomy studies of any of the animals contained in the *Dracopedia*, as well as begin drawing your own designs. I start out all my drawings using an HB lead pencil.

## SELECTING A PENCIL

Pencil leads come in different degrees of hardness. Select pencil leads with an H designation if you want a hard lead. Select pencil leads with a B designation if you want a soft lead. The nice thing about an HB lead is that it's right in the middle—it's neither too hard nor too soft—and will be visible through transparent color or easily be covered with opaque colors.

There are also a variety of pencil types. You can get mechanical pencils, which allow you to use a variety of lead thicknesses. You could also use a lead holder, which is similar to a mechanical pencil, but holds a thicker lead that can be sharpened to a fine point with sandpaper and a craft knife. Of course, there are also the traditional wooden pencils. These can also be sharpened with sandpaper and a craft knife for a very sharp point, or you can use a pencil sharpener.

## Pencil Leads

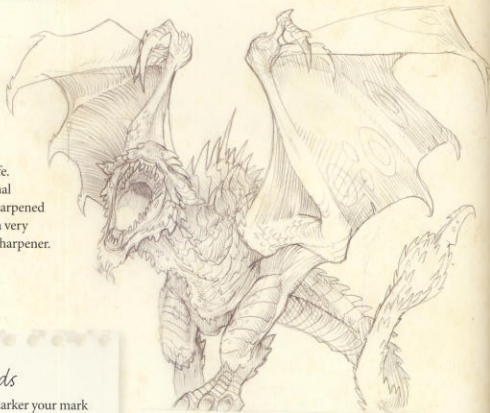
The softer your pencil lead, the darker your mark and the easier it is to blend. If your lead is too soft, the pencil can easily smear, making your drawing look dirty. However, if the pencil lead is too hard, you will have to apply more pressure to the pencil to draw. This can mar your paper's surface. I usually work with a range of leads to achieve different effects, but experiment with different lead hardnesses to find one that works best for you.

## USING AN ERASER

I consider erasers as an additional drawing tool. I prefer to use a white vinyl eraser because it doesn't mar the paper, despite repeated corrections. Eraser pens are readily available. The ends can be cut into points and used to create highlights.

## SELECTING A SURFACE

There are a variety of surfaces you can draw on, though I prefer to draw on bristol board because it's thicker than plain white or notebook paper, and it easily accepts the



## Practice Your Drawing Technique

When designing dragons of your own, you will need to spend a lot of time drawing. Whether you choose to work digitally or traditionally, the drawing is the most important stage because this is where you determine the dragon's overall look and design.

### Fill Your Sketchbooks With Ideas

The sketchbook is the place where your dragon ideas are born. Compile as many notes and ideas as you can. Try to work out the details of your designs before starting a finished drawing.



pencil lead and allows for marks to be easily erased. I work with bristol board that's 14" x 22" (36cm x 56cm) and has a vellum surface. Bristol board comes in pads, which are well suited for doing your final drawing before adding paint or scanning into the computer, as the sheets can easily be removed.



### Drawing Supplies

Pencil on a smooth-surfaced large paper allows me to render high detail, and make changes fairly easily. The most important thing is to be patient. Take your time and don't rush.

It's also very important to get a sketchbook. I believe the sketchbook is the artist's best tool. This is where all of your ideas and observations are jotted down, and the real creativity happens. Sketchbooks are also a good way to document and store your ideas. You never know when an old idea might spark a new concept. A simple doodle with notes might lead you to your best creation.

### USE REFERENCE MATERIAL

Going to your library or bookstore and searching online will allow you to see the wide variety of dragons that other artists have created. In combination with natural history books, these can be a helpful inspiration for getting started.



### RESPECT COPYRIGHTS

It's OK use other people's photos as a reference to get ideas, to see the pattern of a snake, for instance, but unless you have permission from the owner of that image, it is not acceptable to copy that image directly.



# DIGITAL PAINTING

For the dragon demonstrations in this book, I scanned my pencil drawings into the computer, then painted them using Adobe® Photoshop®. The digital painting instructions in this book are based on Adobe Photoshop, but you can use any painting program that has layers capability, such as Corel® Painter™ X, Corel® Painter™ Essentials, and Adobe® Photoshop® Elements. If price is a factor, check out the powerful freeware package GIMP, available at [www.gimp.org](http://www.gimp.org). You can also paint with traditional mediums such as oil, acrylic, watercolor and colored pencil.

Whether you paint digitally or traditionally, the painting process is as follows:

1. **Start with one or more thumbnail sketches.** Thumbnails help you work out your ideas as well as the dragon's form and how it relates to the setting.
2. **Do a final drawing.** Do the final pencil drawing with an HB pencil on bristol board. If you're going to paint digitally, scan your final drawing into the computer. Scan in RGB color mode at 100 percent of the original size and 300ppi so that your painting can be used in print at a later date should the opportunity arise.
3. **Establish the underpainting.** Using transparent colors and large brushes, do a monochromatic underpainting that sets the stage for later colors and details. (In

Photoshop, do the underpainting on a new layer that is set to Multiply mode.)

4. **Refine the forms and begin adding details.** Begin modeling the forms of the dragon and its setting, using semiopaque colors and smaller brushes.
5. **Add details and finishing touches.** With opaque colors and your smallest brushes, apply remaining details.

## BRUSHES

Whether they're traditional or digital, the brushes you use dictate the types of marks you will make. The digital brush shapes on this page are among my favorites; all are adaptations of default Photoshop brush shapes that I created by modifying brush parameters such as Shape Dynamics, Scattering and Wet Edges. Take time to experiment with brush parameters and come up with your own favorite brushes (see page 32 for more on customizing brushes).

## LAYER MODES

With the layering feature, you can paint each stage of a painting on its own layer (like an acetate overlay sheet), then control each layer independently.

In Photoshop, create a new layer by choosing Layer menu > New to set each layer to any of several blending

### Photoshop Brushes

Photoshop provides myriad brush shapes, and there are numerous brush parameters you can alter. Shown here are some of my favorite custom brushes that I made by modifying default brush shapes. Brushes like these can simulate the texture of grass, stone, or hair on a dragon's hide.





modes that govern how its colors blend with those on other layers. You can also hide a layer temporarily by clicking its "eye" icon. The layer modes I use in this book are:

- **Normal layer mode.** This is the default and simplest mode. On a layer in Normal mode, painting with a 100% opaque brush covers up whatever is on the base layer; painting with a lower-opacity brush allows the new color to blend with the base color the way you would expect traditional paint colors to blend.
- **Multiply layer mode.** On a layer in Multiply mode, the color of the base layer gets multiplied by the new color, resulting in a color that is always darker than the base color. Brushing repeatedly on the same area produces a progressively darker color, rather like repeated strokes of a marker.



Normal mode at 100% opacity



Multiply mode at 100% opacity



Normal mode at 50% opacity



Multiply mode at 50% opacity

#### Brush Opacity vs. Layer Opacity

Each layer in a Photoshop document has an opacity setting, which is separate from brush opacity. All four of the gray brushstrokes shown here were painted with a brush set to 100% opacity. The brushstrokes are on a new layer atop the background layer which contains the pencil drawing. By changing the mode and opacity of the top layer, I can control how much of the base layer shows through. These settings simulate the effect of transparent or opaque paints.

## SPECIFYING COLOR IN PHOTOSHOP

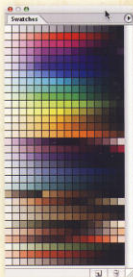
Photoshop comes with a default set of swatches (Window menu > Swatches); you simply click a swatch to use it. An artist's color palette is subject to a great deal of personal taste, but you will almost certainly want some hues that aren't included in the default swatch set, and you'll probably need multiple tonal variations of your hues. Two ways to choose your own colors are:

- **The Eyedropper tool.** Click the Eyedropper on an image to sample a color straight from a specific spot on a painting or photo.
- **The Color Picker tool.** To open the Color Picker, choose Window menu > Tools, then click one of the color squares on the Tools palette. The upper square is the foreground color; the lower square sets the background color.) In the Color Picker, you can click the desired spot on a spectrum of colors, or you can specify numeric values for R, G and B (red, green and blue). The numeric values are useful if you want to know exactly what a color is so that you can use it again later or communicate it to someone else.

Whichever method you use, you can save your custom color as a swatch for easy reuse as follows: Choose Window menu > Swatches, click the triangle button to open the Swatches menu, then choose New Swatch.

#### Palette of Color Swatches

In my digital palette, I've arranged my custom swatches from light to dark horizontally. I can choose any hue, and sixteen tonal variations are immediately available. By moving vertically through the palette, I can change hues without altering the tone.



# AMPHIPTERE

*Draco amphipteridae*





**Striped Amphiptere**

Pencil and digital  
14" x 22" (36cm x 56cm)

**SPECIFICATIONS**



**Size:** 6" to 6' (15cm to 183cm)

**Wingspan:** 6" to 10' (15cm to 305cm)

**Recognition:** Serpent body with batlike wings. Pattern and color vary by region and species

**Habitat:** Temperate to tropical climates, wooded and forested regions

**Common names:** Swallow-tail amphiptere, firewing amphiptere, vulcan amphiptere, mothwing amphiptere, starburst amphiptere, golden amphiptere, striped amphiptere, rock amphiptere, garden amphiptere

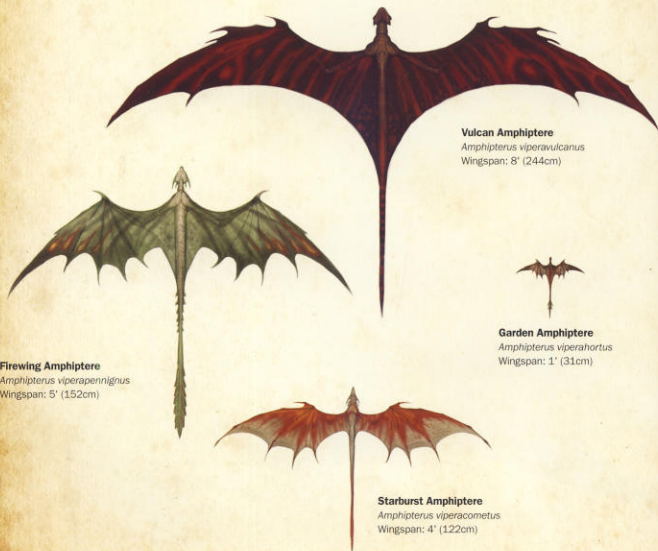
**Also known as:** Winged serpent, flying serpent



## BIOLOGY

The winged serpent is a common dragon consisting of a legless serpent with leather wings. Ranging in size from tiny 6" (15cm) garden asps to larger specimens of 6' (183cm). The batlike wings of the amphiptere allow the creature a range of large distances, but the amphiptere does not usually soar like a bird; rather, it uses short flying and gliding to cover its ground. The amphiptere's coloration varies greatly from species to species, and it feeds primarily on small creatures such as insects, bats, birds and mice. Coming in hundreds of varieties, in various sizes, colors

and shapes, and ranging in habitat all over the world, the winged serpent is one of the most common wild members of the dragon class. The amphiptere is found in all temperate to tropical countries (except Ireland). Today, amphiptere are commonly kept as pets. Rare and beautiful species of winged serpents with exotic patterns are popular in the black markets of Malaysia and India and imported to Europe and North America. This illegal trade has introduced amphipteridae into ecosystems not intended to support them.



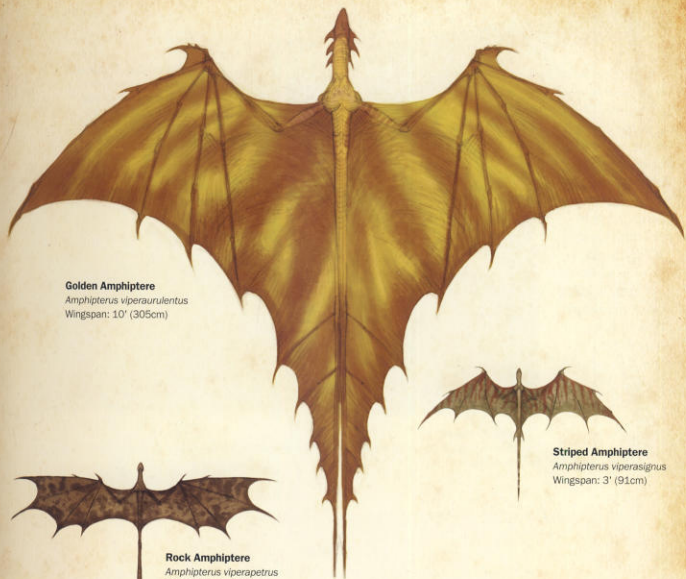
**Firewing Amphiptere**  
*Amphipterus viperapennignus*  
Wingspan: 5' (152cm)

**Vulcan Amphiptere**  
*Amphipterus viperavulcanus*  
Wingspan: 8' (244cm)

**Garden Amphiptere**  
*Amphipterus viperahortus*  
Wingspan: 1' (31cm)

**Starburst Amphiptere**  
*Amphipterus viperacometus*  
Wingspan: 4' (122cm)





**Golden Amphiptere**

*Amphipterus viperaurulentus*  
Wingspan: 10' (305cm)



**Striped Amphiptere**

*Amphipterus viperasignus*  
Wingspan: 3' (91cm)



**Rock Amphiptere**

*Amphipterus viperaetrus*  
Wingspan: 4' (122cm)



**Mothwing Amphiptere**

*Amphipterus viperablattus*  
Wingspan: 1' (31cm)



**Swallowtail Amphiptere**

*Amphipterus viperaudiduplexus*  
Wingspan: 6' (183cm)

## BEHAVIOR

Amphipteridae spend most of their lives in trees and forests. Nesting in high branches, the amphiptere glides between trees, catching insects and small rodents. In this respect the amphiptere is a welcome creature to most farmers. Unfortunately, some amphiptere will find their way into the nests of other birds, looking for eggs. In the hen-houses of domesticated chickens, often cross-fertilization will occur, which can result in the hatching of a half amphiptere, half chicken, known commonly as a cockatrice.



**Amphiptere Egg, 4" (10cm)**

The amphiptere makes its nests high in trees, but also has been known to use the nests of other birds.



**Amphiptere Habitat**

Deep woods and forests are the natural habitat of the amphiptere, but some may also be found living in urban environments.

## HISTORY

The amphiptere has historically been regarded as a creature of mixed fortune, and today it's a greatly misunderstood animal. Since they live on a diet of vermin, the amphiptere is a welcome addition in cities, and there are many amphiptere that live in New York City, making their nests in the high perches of skyscrapers. The endless supply of rats, mice and pigeons help keep urban areas free of the diseases that are spread by vermin.

However, the crossbreeding of the amphiptere with domesticated fowl is responsible for the cockatrice, which is viewed as a scourge and killed on sight all over the world. Its terrible appearance is responsible for the mythology that its gaze can paralyze its prey to stone, thus erroneously placing it in close relationship to the basilisk (see pages 44-53).



Amphiptere were commonly depicted in bestiaries of the middle ages.



#### **Amphipterae Glide**

Amphipterae glide between trees in search of small rodents.



The amphiptere's slender body can be wrapped around tree limbs, allowing it to snatch its unsuspecting prey.



#### **The Cockatrice**

The cockatrice is a hybrid between the amphiptere and domesticated fowl.

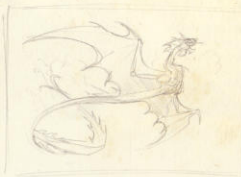


## DEMONSTRATION

# STRIPED AMPHIPTERE

The amphiptere is a beautiful and elegant animal with colorful patterning. When designing a painting of an amphiptere, refer to your references and the field sketches that you've made. Remember, the amphiptere has:

- A snake body
- Colorful wing patterns
- Live in a forest landscape



### 1 Sketch the Composition

Make a rough design sketch of the amphiptere to properly establish the elements of the composition. The curving shape of the amphiptere helps suggest movement.

### 2 Create a Finished Drawing

Do a fresh final drawing with an HB pencil on Bristol board. Use an eraser to lift out tone and clean up stray lines, then scan the drawing.



### 3 Establish the Underpainting

Open the scanned drawing in your paint program. Create a new layer in Multiply mode (see "Layer Modes," page 12), then do a monochromatic underpainting. Using Multiply mode allows the drawing to show through this layer.

I did my underpainting using a range of lighter and darker greens from my palette. When you use Multiply mode for the underpainting layer, brushing repeatedly over the same area darkens the color; use this to help create the shadows.

This is also the time to start blocking in textures. For instance, I created the background texture of leaves using a brush with the Scattering option turned on (Window menu > Brushes). In a traditional medium, you might use a sponge or stencil to create texture.





#### 4 Refine the Color

Create a new layer in Normal mode with an opacity setting of 50%. Refine the colors and details of the amphiptere and its background using semiopaque brushes. Introduce bright colors in the face to attract the viewer's attention to that area. Use the markings of birds and reptiles as design ideas.

Even with the semiopaque brushes, this step will obscure the underpainting a bit, but that's why it's called an underpainting. Don't worry too much about details at this point; much of the painting you do in this step will be painted over as well.



#### UNDERSTANDING OPACITY

I often refer in this book to a color's opacity. With traditional paint, opacity is controlled by mixing in more or less medium, be that water, turpentine or an oil. The analogous adjustment in Photoshop is the opacity setting of the brush you are using. This setting is located in the Options bar (Window menu > Options) whenever the Brush tool is selected. You can also change the setting quickly using the number pad on the keyboard: 1 = 10%, 2 = 20%, and so on.

#### 5 Add the Final Details

Finish the painting by adding a red wing pattern to create more visual interest. Since red and green are complementary colors, the amphiptere will stand out against the background.

# ARCTIC DRAGON

*Draco nimibiaquidae*

## SPECIFICATIONS



**Size:** 8' to 24' (244cm to 7m)

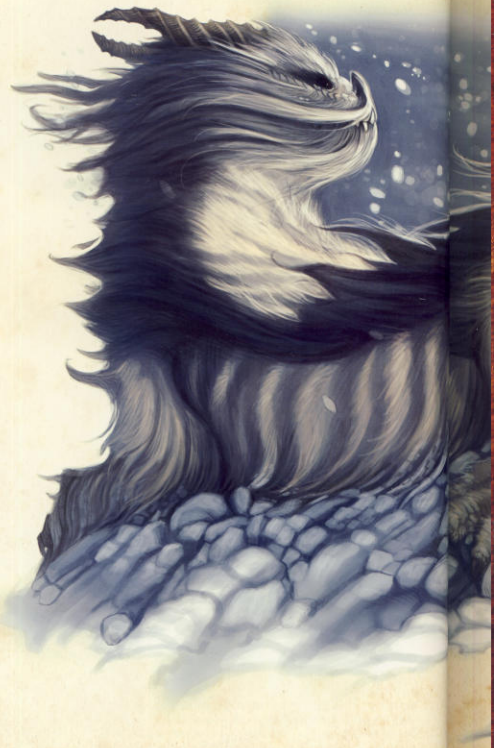
**Wingspan:** None

**Recognition:** Serpentine, flightless dragon with heavy fur. Coloration and patterning vary by species

**Habitat:** Arctic, northern Alpine areas and polar regions

**Common names:** Cook's dragon, cloud dragon, storm dragon, luck dragon, zmey dragon, kilin

**Also known as:** Polar dragon, snow serpent, ice dragon, frost drake, temple dog







**Cloud Dragon**

*Nimbiaquidus nebulus*

Pencil and digital

14" x 22" (36cm x 56cm)

## BIOLOGY

The *Nimbiaquidae* family of dragons includes all of the northern, flightless, furred dragon species. They are serpentine creatures that ply the frozen wastes north of the Arctic circle, hunting seals, small whales and even polar bears. Although greatly resembling the Asian dragon species (see pages 34–43), Arctic dragons differ significantly in their biology in that they all grow fur, and do not have the wing frills particular to the Asian dragon. Covered in a sheath of thick fat and a coat of fur, the Arctic dragon blends into its environment to ambush its prey. Despite fur covering all Arctic dragon species, they, too, have a hide of intricate scales common to all dragons. Ranging across the globe, the Arctic dragon species are found from northern Canada and the tundras of Siberia and migrating as far south as China and the northern United States.

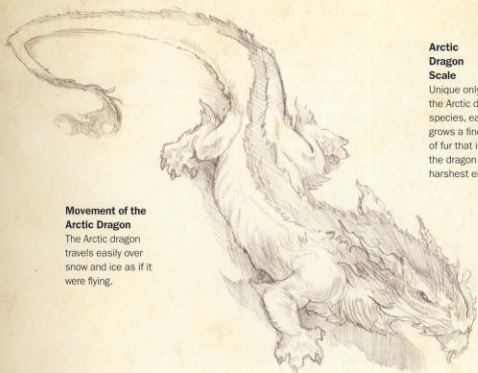


Arctic Dragon  
Heads



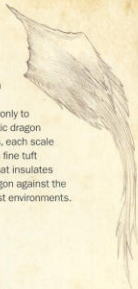
Cloud Dragon  
*Nimblaquidus nebulus*, 35' (11m)





**Arctic  
Dragon  
Scale**

Unique only to the Arctic dragon species, each scale grows a fine tuft of fur that insulates the dragon against the harshest environments.



**Movement of the  
Arctic Dragon**

The Arctic dragon travels easily over snow and ice as if it were flying.



**Cloud Dragon Egg,  
8" (20cm)**

In the fall, Arctic dragons venture south to lay their eggs and wait out the winter in milder regions. Once hatched in the spring, the dragonlings travel with their mother to the northern hunting grounds.





## SUBGENUS

# THE KILIN

The kilin (or kylin, quilin) genus of Arctic dragons more greatly resemble bighorn sheep in size and habitat, and are particular only to the continent of Asia. The kilin is often referred to as the Chinese unicorn.

The kilin species of Arctic dragon will migrate south, following the food supply from the eastern provinces of Russia and into China and Mongolia. Staying high in their Alpine mountains for safety, kilin are adept mountain climbers, leaping agilely from promontories in pursuit of food, or evading larger predators. This behavior is believed to have created the imagery of the kilin's flight. Kilin are one of the few dragon species that live in herds, often gathering in tight groups on high mountains for warmth.



### Kilins Migrate

Herds of kilin can migrate hundreds of miles to winter in milder climates.

## HISTORY OF THE KILIN

Since the kilin species of Arctic dragons migrate south in winter, their contact with human civilization is fairly common. Although they are a shy and elusive animal, they are seen as good luck by many Asian communities. The kilin are also famous as being the traditional mounts or familiars of wizards in Asia. This probably holds some historical truth. Since sorcerers, monks, or hermits would live secluded in the mountains, they would come in contact with kilin, and would domesticate them in rare instances. Today, kilin herds are reduced in Northern Asia and Russia, but in the fall, they can still be seen leaping in the mountain passes.



An example of a kilin from Chinese art.



**Kilin (Chinese Unicorn)**

*Nimbiaquidus dracocaperus*, 5' (1½m)

## BEHAVIOR

Survival in the northern climates of the Arctic is harsh. Most species of the Arctic dragon are omnivorous to take advantage of any food available. The larger species of Arctic dragons will hibernate in the winter, burrowing deep into the polar snows to make its lair. Snow serpents are cunning hunters, artfully using the concealment of Arctic fog and cloud-shrouded peaks to camouflage itself.

With reduced eyesight, snow serpents hunt by smell and the feel of their long whiskers. This allows the animals to hunt effectively, even in blizzard conditions. This ability to seemingly float silently through the clouds has lead to many of the beautiful images of Arctic dragons in Asian art.



### Arctic Dragon Habitat

The frozen wastes of northern China, Russia and America are the Arctic dragon's natural home.





## HISTORY

The fur of the Arctic dragon is prized for its beauty, softness and ability to insulate. Northern tribes, particularly Inuit cultures, throughout the world have elevated the Arctic dragon to supernatural status. In China, the storm dragon is believed to bring prosper-

ity and good luck because their presence frightens off other large predators such as wolves and wyverns. Arctic dragons have played prominently in pop culture. Falkor the Luck Dragon in *The NeverEnding Story*, as well as Appa in the animated series *Avatar*, could be Arctic dragons. Despite these roles as pets or companions, the Arctic dragon is one of the most dangerous animals in the world.



The storm dragon is considered good luck in China and is prominent in Chinese art.

### Manchurian Sceptre, Circa 1750

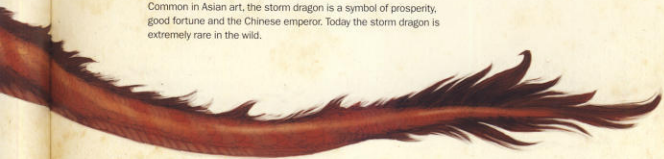
The fur of the Arctic dragon has been considered magical and prized for its beauty and warmth. Courtesy of Beijing Museum of Natural Science.



### Storm Dragon (Chinese Dragon)

*Nimbiaquidus tempestus*, 50' (15m)

Common in Asian art, the storm dragon is a symbol of prosperity, good fortune and the Chinese emperor. Today the storm dragon is extremely rare in the wild.



## DEMONSTRATION

# CLOUD DRAGON

Before starting on a complicated painting, make a list of all the most important elements that should be included, such as:

- Arctic habitat
- Serpentine body
- Fur

In this painting, the color is very monochromatic. Compared with some other dragons, the cloud dragon is white set against a white environment. The limited palette is expanded by using a warm light against the cool shadows, enhancing the dimension and depth of the painting.

### 1 Complete Thumbnail Sketches

Do a series of thumbnail sketches like this one to work out the composition.



### 2 Draw the Finished Composition

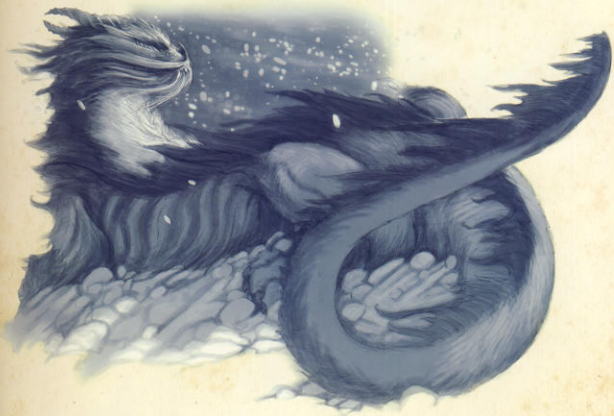
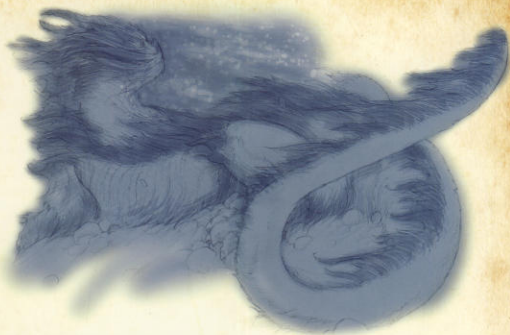
Using your thumbnail sketches as a reference, do a fresh, final drawing with an HB pencil on Bristol board. Use an eraser to lift out tone and/or clean up stray lines, then scan the drawing. The windswept fur accentuates the harsh environment of the cloud dragon and shows how the fur behaves, creating a sense of movement.

### Artist's Note

Dragons with fur are unique in the dragon world and offer the possibility of a wide variety of species with interesting manes, markings and colorations. Use the Internet and your public library to research animals with interesting fur and hair, then try creating your own Arctic dragon. Remember, each element you design needs to have a reason for having evolved in your dragon.

### 3 Start the Underpainting

Create a new layer in Multiply mode. Begin an underpainting using large-diameter, soft-edged brushes set to 100% opacity. I used cool blue hues to create the feeling of a frigid climate.



### 4 Complete the Underpainting

Using somewhat smaller and harder-edged brushes, finish the underpainting. Be sure your placement of lighter colors clearly indicates the direction of the light source. Keep the background soft to contrast against the more defined dragon and the rocky foreground.



#### TRY THE SMUDGE TOOL

If you're using Photoshop, try using the Smudge tool to soften the edges of the fur areas. Click and drag from the colored area outward. (To create realistic wind-blown fur, be sure to drag the Smudge tool in the same direction and at the same approximate angle throughout.)



## 5 Refine the Color and Add Texture

The final details in this painting are only a matter of textures. Use different types of brushes (see sidebars) to simulate the textures of the Arctic dragon's fur. As you work, add warm grays for highlights and cool grays to refine the shadow areas.



### MAKE YOUR OWN CUSTOM BRUSH SHAPES IN PHOTOSHOP

Depending on the type of brush you select from your Brush palette, you'll be able to create different textures to simulate the look of the dragon's fur. These are brushes I've customized in Photoshop. To make your own brushes in Photoshop:

1. Open the image you want to make a texture from. It could be anything: a digital photo, a digital painting, or even a handmade texture that you draw, stamp or paint yourself and then scan.
2. Convert the image to gray scale (Image menu > Mode > Gray scale).
3. Using the rectangular Marquee tool, select a square area to turn into a custom brush. Some tips:
  - To easily select a square, hold down the Shift key while selecting. (If you select an area that isn't square, it may get stretched into a square, which might not be what you want.)
  - The area you select can be as large as 2500 x 2500 pixels.
  - The selection will stay the same size when turned into a brush, so if you want the brush to be smaller, copy and paste the selection into a new grayscale document, then scale it down to the size you want (Edit menu > Transform > Scale).
4. Define the selection as a brush by choosing Edit menu > Define Brush Preset.
5. Select the Brush tool, then open the Brush Preset Picker (the little drop-down menu in the Brush Options bar just under the menu bar). Scroll to the bottom and click your new preset to start using it.
6. If desired, choose Window menu > Brushes and tweak the brush parameters. To save this customized version, click the little round menu button and choose New Brush Preset.



## Painting Hair and Fur

1. Create a monochromatic dark base, using a soft-edged semitransparent brush. Make multiple brushstrokes to achieve the look of built-up transparent color.

2. Choose or create a hair-shaped brush that's slightly more opaque and lighter colors, rough in the texture. As you go, pay attention to the direction the hairs lie on the animal and think about the direction of the light source. Begin to create shadow and highlight areas.

3. Choose a finer brush that's nearly opaque. Using progressively lighter colors on successive layers, brush repeatedly to create the look of fur. (Save the lightest color for the final step.) Keep in mind where the shadow and highlight areas are.



4. Choose a very fine opaque brush and your lightest highlight color, then create just a few individual strands of hair to complete the illusion of fur.



### 6 Add the Finishing Touches

On a new layer in Normal mode, apply finishing touches using small opaque brushes.



## ASIAN DRAGON

*Draco cathaidae*







**Temple Dragon**

Pencil and digital  
14" x 22" (36cm x 56cm)

**SPECIFICATIONS**



**Size:** 2' to 50' (61cm to 15m)

**Wingspan:** None\*

**Recognition:** Long, serpentine quadrupedal body, prehensile tail, wing frill, markings and coloration differ by species

**Habitat:** Temperate to tropical climates, mountains to lowlands, jungles to open plains. Contained to Asia and surrounding islands

**Known species:** Korean dragon, temple dragon, spirit dragon, imperial dragon, bonsai dragon, jade dragon, Himalayan dragon, Fuji dragon

\*Asian dragons are able to glide

## BIOLOGY

The Asian dragon family includes a wide variety of long, serpentine, four-legged dragons with prehensile tails.

Asian dragons are unique, in that they are in the order of flightless dragons (*Terradracia*) like drakes (see pages 90–99), but are capable of limited flight. The reason for this is because they do not possess dedicated appendages for flight, like dragons and dragonettes; rather, an Asian dragon uses a unique construction of frills along its body to glide short distances through the air.

Asian dragons come in a wide variety of colors, sizes and shapes, and can live, depending on their species, in a wide range of habitats, from mountains in the Tibetan Himalayas, to the jungles of Vietnam, and the islands of the Philippines and into India.

Because of the Asian dragon's similarity to the Arctic dragon (see pages 22–33), many species are often miscategorized. This mistake is understandable since the Asian and Arctic dragon species share some habitats in Asia



**Temple Dragon**  
*Cathaidaus draco-*  
*templum*, 30' (9m)



**Asian Dragon Foot**  
The long, slender  
toes of the Asian  
dragon allow the animal to easily climb.



and are often depicted interchangeably in classical Asian art. The two families are, however, very different. Asian dragons do not grow fur, nor do they live above the arctic circle. Arctic dragons, in turn, do not have the gliding ability of the Asian species, or a prehensile tail.

Asian dragons are omnivores, eating fruits, bamboo and meat, as it is available. In the winter in the northern areas of their range, the Asian dragon will migrate to warmer climates.



**Asian Dragon Head**

Asian dragons have keen eyesight to give them excellent vision in the dark rain forests of Asia. The long whiskers give additional perception.



Temple dragon as seen from above.



## BEHAVIOR

Although there are a great number of species, the Asian dragon is a solitary and remote creature keeping to uninhabited areas of deep forest. It lives in the jungles of Asia where there is an ample food supply of small animals and fruits to choose from, allowing the Asian dragon to grow up to 50' (15m) in length. The main rival of this predator is the tiger and other large cats. The Asian dragon is an agile and powerful fighter. Its long, serpentine body is able to

constrict around an enemy, similar to the wyrm (see pages 136–145). Its four legs are equipped with sharp talons for fighting, it has a jaw full of sharp teeth and a few species even possess the ability to spit a caustic expectorant to frighten enemies. If the Asian dragon was not so reclusive and shy, it would be far more dangerous to humans. As such, there are very few injuries reported due to the Asian dragon.

### **The Asian Dragon Is an Elegant Creature**

The Asian dragon is considered by many to be the most beautiful of all the dragon species. Its representation in Asian art is common.



### **Asian Dragon Egg, 8" (20cm)**

The egg of the Asian dragon is revered as a magical object, and is believed to be the source of the myths involving a golden egg.





#### Asian Dragon Habitat

The dense and remote forests of Asia and India are the natural habitat of the Asian dragon.

## HISTORY

A beautiful and elegant creature, the Asian dragon is revered in many eastern countries and is heralded as sacred animals in the Shinto, Hindu and Buddhist religions. The depictions of the Asian dragon in art, architecture, clothing and craft is extensive throughout all Asian countries, and reference in libraries and museums is easily available.

The smaller variants of the Asian dragon, such as the bonsai and temple species, have long been kept and bred in Asian cultures, making traditional companions to emperors and powerful warlords. Today small dragons are still kept as pets, allowing them to be transported to Europe and America.



The Asian dragon is commonly depicted in Continental art. Notice the wing frills in this particular illustration.

## DEMONSTRATION

# TEMPLE DRAGON

Imagining new dragons is a challenge since so many illustrations have been done throughout history. Try not to copy drawings you have already seen. Instead, develop your own creature using the dragons in this book as an example. There are many real-life animals that live in habitats similar to the Asian dragon and have similar behaviors, so research them when designing a dragon of your own. Consider using:

- A serpentine body
- Iridescent coloring
- Asian jungle environment
- Wing frills

### 2 Complete the Drawing

Begin the final drawing simply, starting with the basic shapes of the dragon. Rough in the details to properly place the dragon on the page, using the thumbnail sketches as a guide. Complete the drawing. I prefer to draw all the scales and the texture of the log. I find this saves time later; however you may wish to save these small details until you're ready to add the finishing touches to the painting.



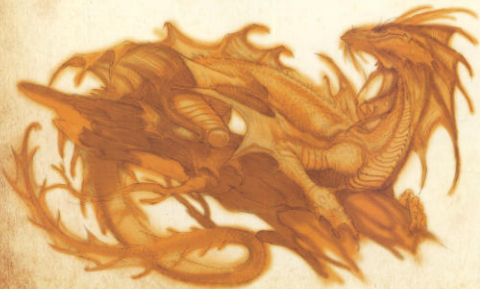
### 1 Create a Thumbnail Sketch

Plan out your design with thumbnail sketches to be certain that everything you want to include fits into your format. Sometimes you'll need to do several thumbnails before settling on a final design.



### 3 Establish the Underpainting

Create a new layer in Multiply mode and name it "Underpainting." (Work this entire step in the Underpainting layer, for reasons you will see in the next step.) Block in the underpainting using broad, bold strokes to establish the basic silhouette of the dragon and the branch it's resting on. Use colors of gold and orange for your underpainting. These colors lend themselves to creating the Asian dragon's iridescent sheen.







#### 4 Create a Mask for the Dragon's Outline, Then Finish the Underpainting

You should now have the pencil sketch on the background layer, and above that, the underpainting layer in Multiply mode.

At this time, the dragon's outline is fuzzy around the edges. You can use the Eraser tool to clean up the edges or you can make a mask. Referring to "Make a Mask" below, create a layer mask on the Underpainting layer to give the dragon a nice hard-edged outline. (It will be easiest to make the mask now, before any more layers get added).

Continue refining the underpainting, sticking to the same gold/orange monochromatic scheme. (Notice that because of the mask on the underpainting layer, you can paint freely past the edges of the dragon without ruining the smooth silhouette.) Refine the underpainting until you've determined the bulk of the light, shadows and details—that way, you have a map of sorts for light and form, and the rest of the painting will go more smoothly.



#### MAKING A MASK

Sometimes you want your dragon to have a hard-edged silhouette so that you can "float" him on white or merge him with a background later on. To do this, make a dragon-shaped mask that hides fuzzy edges and unwanted background areas. The mask will also allow you to paint freely past the edges of the dragon without depositing any color in the background.

1. Click the Underpainting layer in the Layers window to make sure it's the active layer.
2. Choose the Magic Wand tool and make sure the Contiguous option is unchecked.
3. Experiment with the Tolerance setting of the Magic Wand until one click of the wand in the white area around the dragon selects the white area plus just a little bit of the dragon's fuzzy edges. If there is white background space "trapped" inside the dragon shape (such as inside a looped tail), using the Magic Wand without the Contiguous option should select those inside spaces as well as the white areas outside the dragon. If you need to add any trapped white spaces to the selection, do so by holding down the Shift key and clicking the Magic Wand on them.
4. Once you have a satisfactory selection, choose Layer menu > Layer Mask > Hide Selection. The background and the fuzzy edge are now hidden, leaving a smoothly silhouetted dragon.

## 5 Refine the Color

Create a new layer in Normal mode with an opacity setting of 50%. If you created a mask, look in the Layers window, and you'll see a black-and-white thumbnail on the Underpainting layer representing the layer mask you created in Step 4. Hold down the Alt key (Mac; Option key), then drag that mask thumbnail and drop it onto the thumbnail for the new layer. Your dragon mask has now been copied from the Underpainting layer to the new layer. (For the remainder of this demo, repeat this process for each new painting layer you create.)

Using broad brushes, block in the rest of the colors you plan to use in the painting. Settle on the overall color scheme of your painting at this stage; it's easier to make color adjustments now, before more details get added.



## 6 Add a Background

If you have successfully copied the layer mask onto all subsequent painting layers as directed in Step 5, your masked dragon is now floating in a white field that doesn't show off his bright coloring. Add a dark background to contrast with the bright yellow. (For my painting, I purposely chose a bamboo pattern with straight lines to contrast with the many curved lines in the dragon.)

To add a background image behind your dragon, create an image to use as a background in a separate document. Copy and paste your background image into the dragon document. It will automatically be placed on a new layer above the other layers. Crop, scale or otherwise manipulate the background image as necessary, then position it where you want it. Now drag this layer downward in the Layers window until it's at the bottom. The dragon is now resting atop the background.



## 7 Refine the Foreground

Paint the log, using a variety of hard-edged brushes. With the Eyedropper tool, sample the colors from the background and use these colors to inform your color choices on painting the log.



## 8 Add the Finishing Touches

Refine the tail and the log using detail brushes and opaque colors. Continue the detail work in the foreground until you're satisfied with the painting. Patience is key.



# BASILISK

*Draco lapisoculidae*



## SPECIFICATIONS

**Size:** 1' to 12'  
(31cm to 4m)

**Wingspan:** None

**Recognition:**

Multi-limbed reptilian body. Broad, bright markings vary by species



**Habitat:** Deserts and volcanic craters

**Genuses:** *Draco lapisoculidae* (stone-eye dragon), *Draco vulcaniacertidae* (fire-god lizard)

**Known species:** Sahara basilisk, Sonora basilisk, Gobi basilisk, salamander basilisk, strzelecki basilisk, thar basilisk



**Sonora Basilisk**

Pencil and digital  
14" x 22" (36cm x 56cm)

## BIOLOGY

The basilisk is a member of the *Terradracia* order, or flightless dragons. A multi-limbed reptilian beast of about 10 feet (3m) that's famous for its ability to petrify anyone who gazes into its eyes. This magical power has been much dramatized in literature and mythology over the centuries, but actually, it is not the animal's gaze that petrifies, nor is there any magic involved. The basilisk is able to shoot a jet of neurotoxin from a gland in the corner of its eyes (not unlike the horned toad of North America). This toxin

### Basilisk Feet

The basilisk has four sets of powerful, broad feet that allow it to quickly burrow in the sandy soil of its habitat. It's been documented that it can excavate up to 3 cubic feet (85L) of soil a minute, creating elaborate lairs and tunnels under the desert.



### Sonora Basilisk

*Lapisoculidus incustambulus*, 12' (4m)  
The Sonora basilisk of the southern United States and Mexico is the largest and most common species of basilisk.

has the ability to paralyze the basilisk's prey, rendering it defenseless.

The salamander basilisk is contained within the genus *Vulcanilacertidus*. It's a small basilisk, usually not exceeding 1 foot (31cm) in length and commonly lives in environments of extreme heat such as volcanoes. With modern technology it has been possible to explore the salamander's habitat. We now understand that a salamander basilisk can withstand temperatures up to 800° F (427°C). It is believed that these temperatures allow the creature to live in environments where predators are unable to enter, leaving the salamander basilisk in relative safety. It scavenges for food that has died in the harsh environment. When wandering into human habitations, the salamander basilisk will move into the campfires and stoves of people, and scavenge off the remains of the grill. Species include the Fuji salamander, Aetna salamander, Kilauea salamander and the Vesuvius salamander.

The dragon species of basilisk are not to be confused with the South American species of lizards within the family Basiliscus. These small reptiles are related to the iguana in the order of Reptilia.







**Kilauea Salamander**

*Vulcaniaceratodus incendiambulatus*, 8" (20cm)  
This salamander basilisk is found in the volcanoes of Hawaii.

**Basilisk Eyes**

Although it is often depicted as having many eyes like a spider, the basilisk possesses only one set of eyes. It does have as many as eight sets of false eyes. These orifices are used to sense vibrations in the earth and locate its prey. One of these orifices is also used to project its jet of neurotoxin, hence the myth of the basilisk's paralyzing gaze.



**Basilisk Egg, 8" (20cm)**

The basilisk egg can withstand harsh environments.

## BEHAVIOR

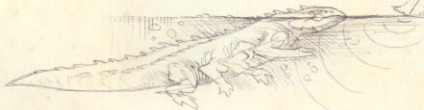
Because of its multiple limbs, the basilisk is a lumbering and slow-moving animal. The legs allow for adept burrowing of its underground lairs, where it is able to lie in wait to ambush its prey with its paralyzing attack. These underground burrows also allow the basilisk to withstand the harsh temperatures of its environment. Despite the legends of its famous gaze, the basilisk has terrible eyesight and is practically blind. Lying in wait for its prey usually during the cool night when animals are more active in the desert, the basilisk senses its prey with its sensitive nasal orifices.

The bite of the basilisk is also dangerous, containing the same neurotoxins from the eye

glands. This highly poisonous and dangerous animal is brightly colored in broad stripes, indicating itself to larger predators as poisonous. The heavy armor further protects the basilisk from enemies. The basilisk is a solitary creature. The female basilisk can lay up to six eggs at a time with an average life span of twenty years.



A common sight in the American Southwest. This sign warns people of basilisks in the area.



### **The Basilisk Can Sense Its Prey's Movement**

Lying in wait for its prey, the basilisk can sense movement in the soil up to 328' (100m). Extreme caution must be taken while hiking in the desert.





#### **Basilisk Habitat**

Basilisks can be found in caves and outcroppings in desert regions from Southern California and Texas to Central America, as well as deserts around the world.

## **HISTORY**

Being a creature from the remote deserts of Arabia and Africa, classical and medieval European reports of the creature are sporadic and unreliable. Bestiaries of this time relate the basilisk to the cockatrice (see pages 18–19); this mistake is even made in accounts as recently as the early twentieth century.

The basilisk's habitat was once a remote and inhospitable land. Now with the intrusion of humans upon the desert landscape, attacks from basilisks have become more common. Along the border between the United States and Mexico in Big Bend National Park, Texas, there are nearly 100 reported fatalities a year from basilisk attack. Park rangers assert that the number is probably much higher since attacks in the back country usually go unreported.



Throughout history, basilisks have been depicted in an array of forms. This image shows a basilisk with crablike legs, since the artist's only reference was probably crustaceans or insects.



## DEMONSTRATION

# SONORA BASILISK

There are many aspects to the basilisk that make it unique within the *Dracopedia*. When designing a full scale painting of such an exotic creature, it is important to try to include all of the elements that define it. When starting a painting, revisit the designs you have developed, along with your notes and reference and begin with a list of all the things that the image should include. This way you can be sure not to leave anything out such as:

- Multiple legs
- Desert landscape
- Spined armor
- Bright markings



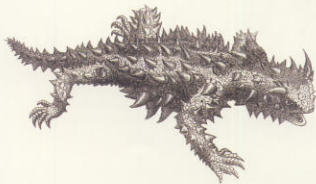
### 1 Create a Thumbnail Sketch

With your pencil, work out some thumbnail designs. After completing this initial sketch, I realized a horizontal image would work best.

## Artist's Note

To design a desert dragon like the basilisk, there is a lot of inspirational reference that is available. Looking at the horned lizards of America, as well as Gila monsters, and even armadillos and armored dinosaurs, it becomes apparent that some designs are common to all desert creatures. Food is so scarce in this harsh climate and competition so intense that most animals

develop bizarre armor to fend off predators. Visit the library and even your pet store to see some of the amazing creatures that have evolved. Study how they live and survive when developing your own creations.



Some reference of horned lizards used to develop the Sonora basilisk.



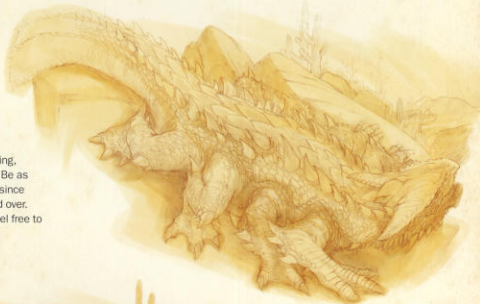
## 2 Create a Final Drawing

Working from your concept sketches, references and notes, work out a detailed final drawing for the painting. Work as large as possible, as this will allow for the necessary details to be rendered.

In this drawing notice that the angle of this view is slightly from above. This allows the drawing to show the eight legs.

## 3 Establish the Underpainting

Create a new layer in Multiply mode and do the underpainting, using a warm golden palette to emulate the glow from the hot desert sun. The underpainting is the most important step of the painting process. It establishes the lighting, texture and mass of the image. Be as loose as you wish at this stage since most of this work will be painted over. Use a variety of brushes, and feel free to make a mess.



## 4 Complete the Underpainting

Finish the underpainting by darkening the areas in shadow, using your finished drawing as a guide.

## 5 Begin to Refine the Color

Working in a new layer, block in the color of the painting's major forms using semiopaque brushes.



## 6 Refine the Background

In a new normal layer and working from back to front, paint the background using opaque colors and detail brushes. A strong backdrop will really make the details of the basilisk pop. Keep the contrast of the background colors high to suggest a strong desert sun.



### KNOW YOUR SOFTWARE

It pays to become well acquainted with all the painting tools and options your software offers. For example, Photoshop users should be sure to open the brush preset menu (choose Window menu > Brushes, then click the small triangle button) and look into the many other brush sets that are available beyond the default set.

Another great feature of Photoshop is that all of your custom brush profiles can also be used with other tools such as Eraser, Dodge, Burn, Smudge and the Stamp tools.



### 7 Refine the Basilisk

Using smaller semiopaque brushes and darker colors, add scale details. Do the scales in multiple semitransparent layers to make a convincingly complex texture similar to the scales on a Gila monster.



### 8 Add the Finishing Touches

Continue refining details until you're satisfied with the painting.



# COATYL

*Draco quetzalcoatlidae*

## SPECIFICATIONS



**Size:** 6' to 10' (183cm to 3m)

**Wingspan:** 8' to 12' (244cm to 4m)

**Recognition:** Snake body with brightly colored feather wings

**Habitat:** Tropical jungles, desert oases, ancient ruins

**Species:** Aztec coatl, phoenix, Egyptian coatl, Egyptian serpent, *hai riyo*

**Also known as:** Coatl, dragon bird

**Pronunciation:** /kwā·tal/





**South American Coatyl**

Pencil and digital

14" x 22" (36cm x 56cm)



## BIOLOGY

The coatyl is of the order of feathered dragon (*Pennadraciformes*). Long believed to be a purely mythological creature, the coatyl is revered as a holy animal to the native people of its habitats. The coatyl family is one of the smallest in the *Dragonia* class, consisting of only a few of the feathered, limbless dragons.

The South American coatyl has a large 6' (183cm) serpentine body that's surmounted by 8' (244cm) colorful wings. It makes its habitat in the ancient ruins and jungles of the South American continent.

The Egyptian coatyl or serpent also lives in and around the ancient ruins of Giza and has four brightly colored gold and turquoise wings.

The phoenix, which makes its habitat in the monuments and temples of Persia and Mesopotamia, is bright crimson with breathtaking ruby feathers. The eggs of the phoenix are unique in that they have a very thick shell to protect the chicks from the desert heat and predators. This shell is also impenetrable to the baby phoenix. The heat of fire, however, cracks the shell open, releasing the newborn phoenix.



**South American Coatyl**

*Quetzacoatlus aztecus*, 8' (2.5 m.)

as if it was born out of the flames. The parent phoenix may refuse to leave the nest, becoming consumed in the fire. Because of this dangerous birthing technique, the phoenix is extremely rare, and some believe extinct.



**Coatyl Feather**

Ancient kings were known to decorate their crowns with these rare feathers. Today, the trading of coatyl feathers is illegal.



South American Coatyl Wing



Egyptian Serpent Wing



Phoenix Wing

## BEHAVIOR

Since it makes its nests in the rocky overhangs and crevices of ancient Aztec and Inca ruins from Belize to Peru, the coatyl is said to have a magical relationship with the peoples of Central and South America. Now biologists understand that the various coatyl species actually live in a symbiotic relationship with humans. Humans feed and protect the coatyl, revering it as a spiritual animal while the species, in turn, keep out vermin.

Only the male coatyl possesses the colorful feathered wings that have become so prized by poachers over the

centuries and have led to their decline in numbers. The coatyl only lays one egg at a time, and the average life span is fifty years.

The habits of the phoenix and the Egyptian serpent are similar in that they live in the ancient stone temples of the Middle East. The millennia-old symbiotic relationship with humans is unique, but centuries of war and development have destroyed the coatyl's ancient habitats, leading to the near extinction of the coatyl species.



### Coatyl Habitat

The South American coatyl makes its habitat in the deep South American jungles. This seclusion has allowed for the relative safety of the species.



### Male Coatyl Behavior

The crown plumes and wattle of the coatyl are only on males, which they use to attract the attention of females.





**Male South American Coatl**

The male coatyl displays the bright plumage of the species.



**Coatl Egg, 4" (10 cm)**

Coatl eggs are so rare, they are worth more than their weight in gold.



**Female South American Coatl**

Female coatyl exhibit earth colors to camouflage themselves while tending to their nests.

## HISTORY

For millennia, the coatyl was always considered to be a mythological creature. First discovered by Spanish conquistador Diego Velázquez de Cuéllar in 1513, the last South American coatyl in captivity died in 1979 at the Lima Zoo. The coatyl is believed by many Aztec religions to be the earthly embodiment of the god Quetzalcoatl, which is the root of the family's Latin name. The coatyl also refers to the massive Late Cretaceous pterosaur, *quetzalcoatlus*, discovered in Texas in 1971.

Once populating the kingdoms of the Aztec and Inca people in vast numbers, the introduction of European animals and diseases in the sixteenth century decimated the species, along with the magnificent culture they inhabited.



**Egyptian Serpent**

The phoenix and Egyptian serpent are also extremely rare with the last phoenix reportedly being sighted in 1991 in Iraq. Today the International Coatl Fund (ICF) works to return this ancient creature to its former glory.

## DEMONSTRATION

# SOUTH AMERICAN COATYL

As you begin to work out the design for a painting of the coatyl, collect your references, concept drawings and notes. These will help you develop a strong idea of what your dragon is going to look like. Think carefully about what aspects of the coatyl make it unique and interesting and then be sure to include those elements in your painting. Some typical coatyl features are:

- Colorful, feathered wings
- Jungle habitat
- Serpentine body
- Avian features

For the background and foreground details, I used reference materials on bromeliad flowers, jungle plants and South American ruins from the library to accurately depict these features.



### 1 Create a Preliminary Sketch

With a pencil, sketch out several possible positions for the coatyl to be sure your design is complete. Here, I've decided to show the coatyl from behind with its wings extended to best illustrate its beautiful plumage.

### 2 Create the Finished Drawing

With an HB pencil, render the full-size drawing, using all of your references for additional details and inspiration. I used photos of Aztec ruins and tropical flowers for ideas about the coatyl's setting.





### 3 Establish the Underpainting

Paint in the basic forms of the image using broad strokes and simple colors to establish the underpainting.

### 4 Complete the Underpainting

Continue the underpainting, keeping the monochromatic color scheme, until all of the elements have been sufficiently rendered.



#### A WORD ABOUT COLOR MODE, GAMUT AND CREATING ARTWORK FOR PRINT

I recommend that you work in RGB color mode. RGB stands for red, green, and blue, the three colors of light that combine to produce all the other colors on television and computer screens.

Digital images generally start out in RGB mode and are converted to CMYK mode for printing. If you expect or aspire to see your work in print, be aware that the RGB gamut or color space is larger than the CMYK gamut, meaning some RGB colors can't be reproduced in CMYK. Watch for the Color Picker's "out of gamut for printing" icon, which looks like a black exclamation point inside a gray triangle. When that icon appears, the chosen color won't be as vivid if converted to CMYK. Click the little box underneath the warning icon, and the nearest printable color will be selected for you.



## 5 Refine the Colors

Create a new layer in Normal mode with an opacity of 50%. Using the thumbnail sketches from your concept designs as a guide, block in the basic colors over the underpainting. Use semiopaque, broad flat brushes.



## 6 Refine the Background

Starting with the background, apply colors that are more opaque from those used in Step 5. Use detailed brushes to render the setting as a backdrop for the coatyl. Keep the colors and contrasts low. This will allow the bright colors and deep shadows you will develop on the coatyl to stand out.

## 7 Punch Up the Contrasts

Create a new layer in Normal mode with an opacity of 100%, and, moving forward from the background, paint the log and the bromeliad flowers. The bright red petals of the plant give a visual "pop" that separates foreground from background.



## 8 Add the Final Touches

Working with 100% opaque brushes, punch up the colors, darken the shadows and sharpen the edges. Use detail brushes to finish the painting. The sharp detail and vibrant color makes this coatyl eye-catching.



# DRAGON

*Draco dracorexidae*

## SPECIFICATIONS



**Size:** 75' to 100' (25m to 31m)

**Wingspan:** 100' (31m)

**Recognition:** Quadrupedal serpentine body, large bat-like wings. Colors, markings and crests vary by species

**Species:** American Acadian green dragon, great Icelandic white dragon, Ligurian black dragon, great Welsh red dragon, great Norwegian blue dragon, great Chinese gold (yellow) dragon, Elwha brown dragon

**Habitat:** Temperate to sub-tropical climate. Maritime locales

**Also known as:** Great dragons, true dragons







**Great Welsh Red Dragon**

Pencil and digital

14" x 22" (36cm x 56cm)

## BIOLOGY

The dragon is by far the most feared and famous creature in the history of the world, even though it is one of the rarest (second only to the coatyl, see page 54). With 100' (31m) wingspans and the ability to "breathe" fire, it is the largest and most powerful terrestrial animal that has ever lived. The dragons come in a wide variety of species and range all over the world, from the rocky shores of the Pacific Northwest to the Mediterranean Sea. Revered by every culture and in every region, today there are few surviving specimens. The bright colors of each species are more pronounced in the males than the females.

Although there are many species of the dragon, the most famous is the Welsh red dragon. Consisting of a large quadrupedal body, a long tail, a serpentine neck, scaled armor, surmounted by massive bat-like leather wings, highly intelligent, and able to breathe fire, the dragon is the most enigmatic and fascinating creature alive. Although dragons are unable to speak, they have a long and revered relationship with the people of their territory.

### Great Welsh Red Dragon

*Dracorex*

*idraigoxus*

Wingspan: 100'  
(31m)

The most famous  
of all the great  
dragons.





**Great Norwegian Blue Dragon**

*Dracorexus sognefordus*  
Wingspan: 85' (26m)

**Great Icelandic White Dragon**

*Dracorexus reykjavikus*  
Wingspan: 75' (23m)  
Icelandic dragon markings  
become white in the winter and  
brown in the summer.

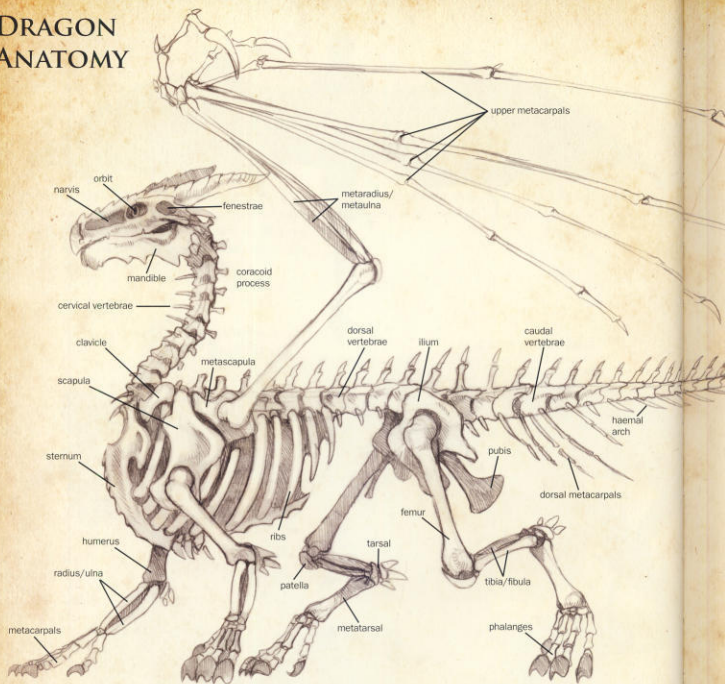


**Great Chinese Gold Dragon**

*Dracorexus cathidaeus*  
Wingspan: 90' (27m)



# DRAGON ANATOMY

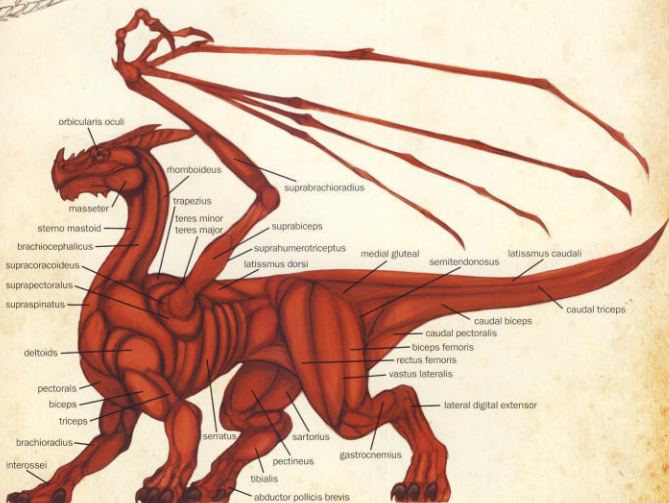


Skeleton of Great Red Welsh Dragon

Hollow bones like those of a bird are common to all dragon species. This reduces their weight by thirty percent, aiding in flight.

It is believed that Leonardo da Vinci's extensive sketches of wing designs are based on those of the great dragon.

#### Musculature of the Great Red Welsh Dragon



## BEHAVIOR

Dragons are highly territorial and antisocial, even to other dragons. They prefer high cliffs and rocky outcroppings, making their homes along tall palisades overlooking the sea. These lofty and remote vantage points allow for clear observation of their territory, safety from enemies and the ability to take flight. The seaside also allows the dragon to feed from the ocean, snatching tuna, porpoises and even small whales from the water, and then bring it back to its lair. Despite their massive size, dragons do not range very far from their lairs and only move if the food near their lairs disappears, or if they are threatened by human encroachment.

Human-dragon interaction is actually quite rare, since they do not usually share the same territory. The only natural enemies to the dragon are humans and wyverns. Once reaching adulthood, a dragon will leave its mother's lair and find its own nest. Here the male dragon will begin to prepare for a female. Collecting shiny objects to line the nest, the male dragon will attract a female

using calls and fire displays. Once the eggs are laid, the male dragon will leave the lair to find new territory, leaving his land and home to his offspring. Dragons can lay up to as many as four eggs at a time and can live in excess of five hundred years. They are also capable of hibernating for long periods of time. Waking a sleeping dragon is not recommended.



### American Acadian Green Dragon

*Dracorexius acadicus*  
Acadia National Park in Maine is now home of the nature preserve that protects the green dragon.

It is believed that the ancient American Acadian green dragon, Mowhak, was alive before the American Revolution.

### Dragon Habitat

Supplying abundant quantities of food, constant strong winds and seclusion, the seaside cliffs of the world are the natural habitats of the dragon.





## HISTORY

In recent history, the relationship between humans and dragons have been almost symbiotic, with much care being given to the needs of dragons. Human sacrifices were once regarded as necessary, but that



practice has all but been abandoned in the western world, and actual accounts of human deaths by dragon attack are extremely rare. The oldest and most ancient dragon on record is the venerable Tong Long Huo, the ancient gold dragon of China, who is reputed to be over five hundred years old.

### The Dragon is a Common Symbol

The dragon is a common beast of heraldry, symbolizing power, strength and majesty. King Arthur of Camelot used a red dragon as his standard. Henry V and Edward I of England also bore dragon banners.



### Dragon Depictions Vary

The vast majority of people never had seen a dragon and their renderings are based on secondhand accounts and hearsay.



### Red Welsh Dragon Egg, 16" (41cm)

Finding unattended red dragon eggs are extremely rare.

### Dragon Fire

Of all the dragon species only the *Dracorexus* family is able to "breathe" fire. The dragon's ability to breathe fire is actually a misnomer. More accurately, the dragon spits fire. Dragons are able to secrete a highly volatile liquid in a gland behind the mandible. The dragon is able to spit this liquid up to 100' (31m). Once in contact with oxygen, the liquid quickly oxidizes and bursts into flame. This attack is only possible about once a day, and usually as a last resort defense, allowing the dragon to escape a dangerous situation.

## DEMONSTRATION

# GREAT WELSH RED DRAGON

Gather up as much reference as you can for your painting before you begin. Make a list of each of the elements you want to include:

- Massive wingspan
- Maritime habitat
- Breathing fire
- Coloration and markings
- Body design and wing anatomy

I have always envisioned dragons as animals that could fly. Use references of large birds like the albatross to conceptualize how they would look while flying.



### 1 Sketch the Composition

Plan your painting with a series of rough thumbnail sketches. I settled on a view from the side and slightly underneath to show off this dragon's muscular body as well as its fire-spitting ability.

### 2 Complete a Detailed Drawing

Do a detailed final drawing with an HB pencil on bristol board. As you work, pay attention to how each element works with the overall anatomy, and strive for a natural look. Using reference photos of other animals, such as bats and birds such as herons, may help you with both inspiration and accuracy.



### 3 Adjust the Color of the Drawing

After you have scanned the final drawing into the computer, use Image menu > Adjustments > Color Balance to give the drawing a different hue that will easily blend into the underpainting.



### 4 Establish the Underpainting

Create a new layer in Multiply mode for the underpainting. Use soft-edged transparent brushes and start roughing in the forms with light and dark values of a deep violet.





## 5 Refine the Underpainting

Continue to build the underpainting using smaller brushes and the same monochromatic scheme as in the Step 4 until the level of detail is sufficient to define the form, space and lighting. It's best to get these key elements correct now, as they are the basis for the remainder of the painting.

As you can see, the area of greatest contrast involves the head and the fire, making this area the focal point. The dark smoke further adds contrast and makes the fire appear brighter. Add some reflected light to the dragon's breast to define the shape.

### *What Color Is a Dragon?*

Like the colors and patterning of a dinosaur, dragon coloration is open to interpretation, and there are a lot of references you can take coloring cues from. In looking at traditional heraldry, you'll notice the dragon is usually depicted as a single color, with red being the most popular choice. Think about why your dragon is the color it is. Its coloration could help it blend into its surroundings, it could indicate it is a poisonous creature or it could be used to attract a mate.

## 6 Add Color

Create a new layer in Normal mode at an opacity of 50%. Begin blocking in the basic colors.



## 7 Refine the Background

Create a new 100% opaque layer in Normal mode. Starting in the background and working forward in space, carefully paint the rocks and waves behind the dragon.

## 8 Punch Up the Contrasts

At this stage, I noticed that the background was too strong and was competing with the foreground for attention. I decided to soften it by adding a white haze of fog as follows.

Create a new layer at 35% opacity in Normal mode. Choose a soft brush and enable Airbrush mode by clicking the airbrush icon in the Options bar. Select a white hue, then brush in haze or fog over the entire background.



### PHOTOSHOP TIP

Another option for adjusting the contrast in Step 8 would be to simply brighten the whole layer using Image menu > Adjustments > Levels. However, I prefer not to permanently alter anything I've painted and this allows me to remove the layer at any time.



## 9 Refine the Details

Create a new layer in Normal mode. Use smaller brushes and brighter, less transparent colors to refine the details on the dragon.



## 10 Add the Final Touches

Adding new layers as needed, paint the final details, shadows and highlights. End with opaque colors and detail brushes. Work in stages and take your time; the attention to detail will bring the dragon to life.



## 11 Detail the Head

Remember to zoom in to add the fine details to the head. Notice the reflected light of the fire reflecting back into the dragon's mouth, lips and even neck.

# DRAGONETTE

*Draco volucrisidae*

## SPECIFICATIONS



**Size:** 3' to 16' (91cm to 5m)

**Wingspan:** 6' to 25' (183cm to 8m)

**Recognition:** Bipedal torso, large hind legs, broad wings, avian head

**Habitat:** Temperate to tropical climates, including plains and grasslands

**Species:** English spitfire dragonette, American Appaloosa dragonette, Abyssinian dragonette, messenger dragonette, Waynesford dragonette

**Also known as:** Dragonelle, dragonel, dragonet



**British Spitfire Dragonette**

Pencil and digital  
14" x 22" (36cm x 56cm)





## BIOLOGY

Few images evoke more romance and excitement than that of the dragon rider on his "steed." For centuries the dragonette has been bred by civilizations all over the world for a variety of purposes, from the diminutive courier dragonette to the powerful war dragonettes.

A bipedal dragon with powerful back legs and small front legs used for digging and nest building with expansive batlike wings for graceful and agile flying. The dragonette usually stands about 6' (183cm) at the shoulder, and

is 12' (4m) feet in length with a 20' (6m) wingspan. A vegetarian herd species from the open plains, and much less intelligent than their larger dragon cousins, the dragonette has been domesticated by early civilizations and today is common throughout most of the world. Bred into many hundreds of breeds, the dragonette can be found in a variety of patterns and sizes to fit their many functions.



**American Appaloosa  
Dragonette**

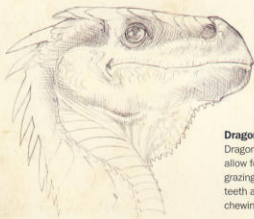
*Volucrisus cheyennus*,  
12' (4m)



#### **Dragonette, Overhead View**

Wingspan: 25' to 30' (8m to 9m)

Since they are prey to wyverns, the pale undermarkings of the dragonette camouflage it against the sky.



#### **Dragonette Head**

Dragonettes have large eyes that allow for peripheral vision while grazing. The short muzzle and small teeth are designed for biting and chewing grass.



#### **Dragonette Foot**

The foot of the dragonette is built like a large bird's, allowing for agile running in the open plains.



#### **Courier Dragonette**

Small courier dragonettes are used to carry messages over long distances.



# BEHAVIOR

Dragonettes are unique within the dragon class in that they are a vegetarian herd animal living within flocks (or flights) that can grow into thousands of animals. A very social and docile creature, they commonly build their nests on the high plateau mesas of the central United States, eastern Europe and Australia. A whole flight of dragonettes may migrate thousands of miles between seasons to follow the food supply and reach their breeding grounds.



**Dragonette Eggs 10"**  
25cm), 1½" (38mm)

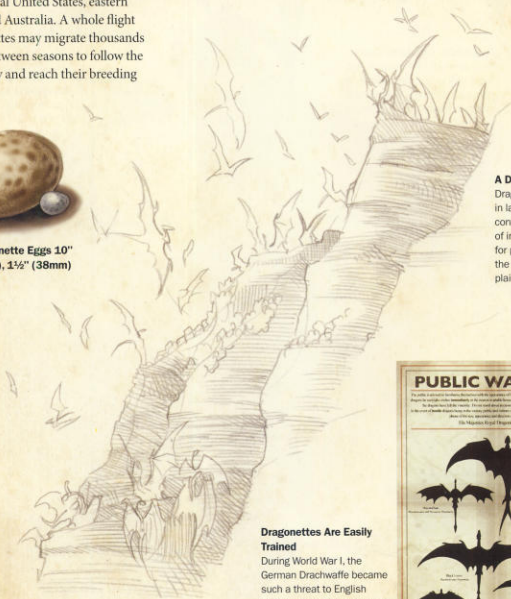


## Dragonette Locomotion

This sequence of wire-frame drawings illustrates how the dragonette runs on its powerful hind legs. Notice how its center of gravity is kept over its knees.

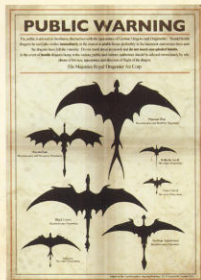
## A Dragonette Flight

Dragonettes gather in large flights, containing hundreds of individual animals for protection along the tall cliffs in the plains.



## Dragonettes Are Easily Trained

During World War I, the German Drachwaffe became such a threat to English civilians that advisories such as this one were commonly displayed throughout much of the country. Notice the wide variety of dragonettes that were developed and try imagining all of the possible wing designs.





## HISTORY

Varieties and breeds of the dragonette can be found in almost all regions of the world and the dragonette ranges in size from the small (3' [91cm]) to the large working breeds, (16' [5m]). Although not as intelligent or easy to train as horses, dragonettes have long been used for transportation and military use, allowing for a flying cavalry in use in ancient Egypt and the American Civil War. Famous legions of dragoniers include Napoleon's Dragoniers, the British Royal Dragon Guard, the German Drachwaffe and the American Dragon Express Mail Service.

Most dragonettes have been used by military commanders to survey the battlefield and carry messages, although using bombs dropped from the air has been attempted from the Chin Dynasty in China up to World War I. After WWI, the dragonette was replaced by the airplane, and today the dragonette is solely kept by breeders and racers. For more information visit the International Dragonette Breeders Association (IDBA).

Wild dragonettes in their native habitats are rare, but attempts to reintroduce the animal to these areas are currently under way by conservation societies.



A typical western-style dragonette saddle.



British Enfield rifle



helmet and goggles

dragon whistle

leather riding jacket

jackboots and dragon spurs



Wesley revolver and holster



courier bag



grenades and satchel



Dragonettes have been used in the military for centuries. Here you see William Duke of Normandy and his knights astride dragonettes during the Battle of Hastings in 1066.

### WWI British Dragonier, Circa 1915

The apex of the dragon rider took place in the late 19th and early 20th centuries. The advent of airplanes and technology made the dragonier obsolete. This illustration shows all the gear and clothing of a WWI-era British dragonier officer.

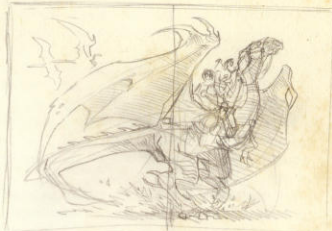
## DEMONSTRATION

# BRITISH SPITFIRE DRAGONETTE

The dragonette is a complex animal with many possible variations. The painting needs to show these variations to best illustrate its uniqueness. For this image, I decided to highlight the following details:

- The ability of the dragonette to be ridden
- The tack and harness needed
- The gear worn by the dragonier
- The camouflage
- The use of dragonettes in groups
- The range of dragonettes in size and function.

Designing the dragonette's color and markings should begin in the concept stage. I was inspired by raptors and warplanes, which are camouflaged against the ground from above and against the sky from below. The markings on the dragonette are very similar to those seen on World War I German airplanes.

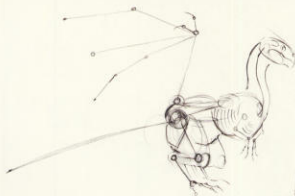


### 1 Sketch the Composition

Develop several thumbnail sketches in your sketchbook that include all the elements you want in the image.

## Establishing Proper Anatomy and Posture

The human dragonier and the two with the two dragonettes of different sizes may make this drawing seem complicated. Reduce the possibility of confusion by creating an armature to establish the figures' basic structure



1. With your pencil, start with a rough outline to ensure you've established the proper anatomy and posture.

and form. An armature is the foundation the drawing (or sculpture) will be built upon. In this case, the rough, skeletal outline of the dragonette serves as the armature for the drawing.



2. Building upon the armature, draw the muscles of the dragonette, using the basic anatomical diagram of a dragon on page 69.

## 2 Complete a Final Drawing

Do the final drawing with an HB pencil on bristol board, using your thumbnail sketches and armature drawings to guide you. Scan the drawing.



## 3 Establish the Underpainting.

Create a new layer in Multiply mode for the underpainting. Block in the underpainting using transparent brushes and a monochromatic green color scheme. Establish the forms and lighting. Keep the background elements lighter than the foreground dragonettes and rider. This will add depth to the painting.



#### 4 Add the Color

Create a new layer in Normal mode with an opacity setting of 50%. Following the patterns and colors established in the drawing and underpainting, punch up the colors of the dragonette everywhere except the underside, where the colors should remain lighter and duller. Paint the small carrier dragonette red so it stands out against the dark green background, and reinforces the wide range of colors and markings dragonettes could be. Paint the dragonier and the dragonette's harness and saddle using smaller semitransparent brushes.



#### REVISIONS IN PHOTOSHOP

If you find that you'd like to rework an area where you've added a brushstroke or a color, you can simply just apply the new color or brushstroke right over the old one. Because the previous color or brushstroke will not show through, you can easily work out the color of your composition at this stage.



## 5 Refine the Color and Background

Refine the background dragonettes and dragoniers. Remember to use less detail, color and contrast to allow the background elements to recede from the image and enhance the illusion of depth.

### Keep the Background in the Background

As you finalize the background elements, remember to keep the edges soft and the contrast low. You don't need to add much detail. All these measures will help these elements look distant.





## 6 Refine the Dragonier and Red Dragonette

Using smaller brushes and more opaque colors, apply the greatest amount of detail to the rider and messenger dragonette. Add bright, saturated blues along the dragonette's body and wings for interest. Add oranges to the red wings and wattle, creating the appearance of light shining through a thin membrane.

Refine the dragonier, developing his ruddy appearance and adding highlights and shadows to suggest the texture of his jacket, scarf and leather straps.



## 7 Refine the Dragonette's Head

Refine the dragonette's head, adding reds and oranges to make the face stand out. As in Step 6, create the appearance of light shining through the wattle with orange. Add bright, sharp highlights on the rivets and rings on the riding gear. Add vibrant colors around the eyes, and gold inlay on the leather bridle. Add a few highlights to make the bridle shine.



## 8 Refine the Feet

Use a variety of brush textures to create the dragonette's feet. Brushes that resemble traditional, painterly techniques such as splattering, scumbling and drybrushing will create interesting marks and textures on the dragonette. Add highlights to the scales and claws to create the appearance of shiny, reptilian skin.





## 9 Add the Finishing Touches

Using small brushes and opaque color, add the remaining details to the composition. Use bright blue-green and orange-yellow to refine the green dragonette's ridges. Touch up the scales. Notice how much more detail is rendered in the face compared to the wing behind it.





# DRAKE

*Draco drakidae*





**Common Drake**  
Pencil and digital  
14" x 22" (36cm x 56cm)

## SPECIFICATIONS



**Size:** 3' to 12' (91cm to 4m)

**Wingspan:** None

**Recognition:** Quadripedal stocky body; flightless

**Habitat:** Temperate to tropical climates and open plains

**Species:** St. Cuthbert's drake, pit drake, racing drake, draft drake, Wyeth's drake, Pyle's drake, war (siege) drake, Ishtar drake (extinct)

**Also known as:** Gargoyle, drakoyle, gorgon, draggonne, drak



## BIOLOGY

The drake is a common, flightless dragon that was domesticated by many early civilizations. The drake comes in hundreds of species and breeds, but all are four-legged animals with short, compact bodies allowing for swift running. The great advantage to the drake is its ability to adapt to its environment and create hundreds of subspecies that are specially designed for almost any function. The drake's powerful jaws and sharp teeth are designed to effectively capture and kill its prey.



### Racing Drake

*Drakus properitus*, 6' (183cm)

Small, swift racing drakes are still bred today. Their speeds can rival those of a cheetah.



### The Common Drake

*Drakus plebeius*, 8' (244cm)



### War (Siege) Drake

*Drakus bellumus*, 16' (5m)

Large drakes like this siege drake were bred until the nineteenth century for use in warfare. They often pulled chariots and cannon.



#### **St. Cuthbert's Drake**

*Drakus eruous*, 10' (3m)

Domesticated in the middle ages by the monks of St. Cuthbert's Abbey in Bavaria, their sturdy build allowed them to climb rocky landscapes to aid pilgrims lost in the snow.



#### **Pit Drake**

*Drakus barathrumus*, 4' (1.22cm)

While many drakes have been bred for fighting, the pit drake is the most notorious. It is illegal to breed pit drakes in many countries.

## BEHAVIOR

Drakes are naturally a pack-hunting animal living in the grasslands and open savannahs around the world. Groups of drakes can grow to several dozen, bringing down large game such as elk, moose and dragonettes. Today there are very few wild species of drake in the world, having been hunted to near extinction. Yet, the drake is a very popular animal amongst breeders, and there are hundreds of breeds throughout the world.

A common drake at rest.



Drake Habitat



**Wedge-Shaped Head of the Common Drake**

Front and side view of a common drake head. The wedge-shaped head allows for binocular vision when hunting. Powerful jaws and a dragon beak is used to kill its prey.

**Drake Egg, 10" (25cm)**

In the wild, drakes live in packs, which guard the nests from scavengers.







#### Drake Skull

A drake's skull has large areas for the attachment of jaw muscles and ligaments for their powerful bite.



#### Drakes Are Valued for Their Speed

Drakes are revered for their swift running and ability to bring down powerful game.

## HISTORY

Originally domesticated by Egyptian and Babylonian cultures, hundreds of drake breeds have been developed over the centuries, from small toy drakes no more than 12" (30cm) long, to the massive siege drake over 20' (6m) long.

Because of their common usage as guard animals, drakes in art routinely graced architecture from Mes-



#### Drake Armor

For centuries, drakes have been used as hunting animals and as guards. Armor like this is still used today in many parts of the world.

Courtesy Dresden Museum of Natural History

opotamia, Egypt and Asia. During the Middle Ages the drake became such a symbol of protection and ferocity that their likeness was used on cathedrals and churches as downspouts and to help deter nesting pigeons. These "gurglers" became known as gargoyles, and today the term is synonymous with the drake in many parts of the world.



#### Gargoyle

Used as waterspouts on gothic cathedrals in Europe, gargoyles depicted dragons of all types, but drakes are the most common.

Courtesy St. Margaret's Cathedral, Carcassonne, France

## DEMONSTRATION

# COMMON DRAKE

Approaching a painting of a drake is, in many ways, similar to painting a large cat or dog. Work with references of tigers, bears and wolves to approximate a drake's anatomy. The specific type of drake you design will have specific details that you'll want to focus on such as:

- Powerful hunter
- Strong jaw
- Stocky, muscular body
- Grassy habitat
- Camouflage patterning



### 1 Complete a Thumbnail Sketch

Begin with several thumbnail sketches to work out the designs for your painting. Be sure to include the elements you've deemed important.

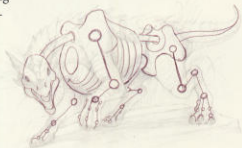


### 2 Do a Final Drawing

Do the final drawing with an HB pencil on bristol board. Get the anatomy right before you start adding scales and other details. Scan the drawing.

## *Underlying Structure Is Important*

When working on a drawing of a dragon, always remember that there's a moving skeleton inside the body. The internal structure supports and in many ways dictates the external design, so get the structure right before you worry too much about drawing surface details.



### 3 Establish the Underpainting

Create a new layer in Multiply mode. Use large transparent brushes and tan to establish the basic forms and colors.



### 4 Complete the Underpainting

Continuing in the same layer with the same colors, develop the details. Establish the shadows and highlights, following those in the drawing. With smaller brushes, add details to the face. The eyes and teeth should be the lightest color in the underpainting.





## 5 Refine the Color

As you can see in the concept design for the common drake on page 96, this creature has brown stripes as camouflage to help it blend into its surroundings. That means our painting will be relatively monochromatic. Since you can't depend on color to distinguish one part of the body from the next, try using different brush textures on them instead.

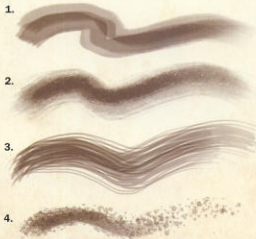
Using smaller brushes, refine the details in the face, using reds and yellows to define the eyes and teeth.



### COLOR AND TEXTURE

I created these textures using different brushes in Photoshop. Experiment with different brush shapes to make unique textures of your own.

1. Smooth texture used for the patterns on the drake's hide.
2. Mottled effect to add additional texture to the hide.
3. Multiple thin lines suggest the background grasses.
4. Pebbled effect to create the ground's texture.





#### 6 Add Details to the Hide

Add purple reflected light to illuminate the underside of the drake. This reflected light is created by the main light source bouncing off the rocks in the shadows and reflecting back onto the drake. This helps add a lot of dimension to your painting. Usually the reflected light is the complementary color of the main light (in this case, purple is the complement of yellow).



#### 7 Add Detail to the Face

With your smallest brushes, add the finishing touches to the face. As you work, zoom in on the image so you can easily add details such as highlights on the teeth.



#### 8 Add the Finishing Touches

With your smallest brushes, add opaque details and highlights.

# FEYDRAGON

*Draco dracimexidae*







**Monarch Feydragon**  
*Dracimexus monarchus*  
Pencil and digital  
14" x 22" (36cm x 56cm)

## SPECIFICATIONS



**Size:** 6" to 9" (15cm to 23cm)

**Wingspan:** 10" to 14" (25cm to 36cm)

**Recognition:** Four brightly colored wings; wide variety of colors and patterns

**Habitat:** Temperate to tropical climates, forests and woods

**Species:** Queen Mab feydragon, monarch feydragon, swallowtail feydragon, cardinal feydragon, leafwing feydragon (jabberwocky)

**Also known as:** Faerie dragon, fairy dragon, fey dragon, pixie wyrm, jabberwocky

## BIOLOGY

Anyone with a flower garden is familiar with the feydragon. Despite many misconceptions, and its Latin name, the feydragon is not an insect, but actually belongs in the dragonia class. Its forearms have evolved into a second set of wings, and the legs and feet have developed long digits for grappling with prey and holding onto small limbs.

The feydragon flies like an insect or hummingbird, rather than like a dragon. Its wings flap so quickly, that it is able to hover in midair like a helicopter. Its four wings give it the ability to move in any direction.

A wide variety feydragons species exist throughout the world in an equally wide range of colors and shapes. This carnivorous creature primarily eats insects, but will also go after larger prey such as dragonflies and even hummingbirds.

### Feydragon Tail

The prehensile tail of the feydragon is capable of wrapping around objects to give it better balance.



### Leafwing Feydragon (Jabberwocky)

*Dracimexus pennafolium*, 10" (25cm)

The jabberwocky (called so for its jabbering chatter) is found in many Northwestern European countries.



### Feydragon Wings

The four wings of the feydragon act like the rotors of a helicopter, allowing the creature to hover and move in all directions. At rest the wings fold against the body like fans.

### Feydragon Feet

The feet of the feydragon are long and slender so that it may perch on slim branches.



**Feydragon Egg,  $\frac{1}{2}$ "  
(12mm)**

The feydragon can lay many eggs, which are no bigger than the size of a pea, at a time. However, many eggs will be eaten by predators and insects.



**Monarch Feydragon**  
*Dracimexus monarchus*,  
10" (25cm)  
Native to the Americas,  
the monarch feydragon  
is one of the most  
popular dragons.



**Swallowtail Feydragon**  
*Dracimexus furcaudus*, 8" (20cm)  
Native to the African continent,  
the swallowtail is one of the most  
exotic-looking dragons.

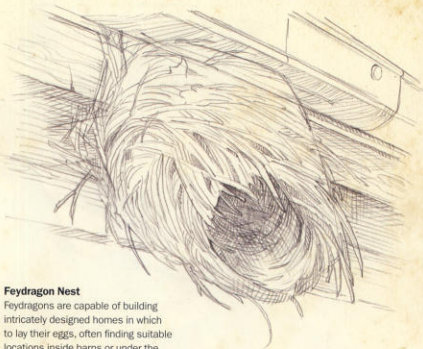
*Artist's Note*

With hundreds of recorded feydragons, and hundreds more that have never been discovered, it is possible to create a species of all different sizes, shapes and colors. The feydragon is open to as much creativity as you have. Go out into your yard or neighborhood park and explore the types of animals that live there, then decide what type of feydragon might fit in.



## BEHAVIOR

Although the tiniest of the dragon species, feydragons have many of the same habits of their larger cousins. Hunting insects in the evening and early morning hours, feydragons will build nests in rocky overhangs or trees to lay their eggs, but prefer to live in the cool, dark woods. Northern breeds of feydragon will not migrate in the winter, but rather hibernate. Feydragons mate in flight, using their brightly colored wings and phosphorescent tails to lure a partner. Like their much larger cousins, the great dragons (see pages 64–77), the feydragon will steal small shiny objects to line its nest.



**Feydragon Nest**

Feydragons are capable of building intricately designed homes in which to lay their eggs, often finding suitable locations inside barns or under the eaves of roofs.



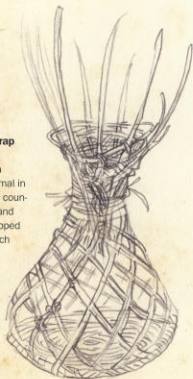
**Feydragon Habitat**

The feydragon is one of the few dragon families that can live in close proximity to humans without any fear of danger.



#### Feyhouse

Building feyhouses is a popular hobby for community garden clubs and Boy Scout troops. Feyhouses are best located in the shady areas of a garden.



#### Feydragon Trap

Although the feydragon is a protected animal in most western countries, in Asia and Africa it is trapped in baskets such as this one and sold as a delicacy.

## HISTORY

The feydragon is considered to be the inspiration of almost all fairy and elf tales around the world. Will-o'-the-wisps, brownies, pixies and the like, are all attributed to the playful, colorful and mischievous feydragon. In almost every culture it is considered good luck to have a feydragon move into your garden, and many people leave out small offerings of shiny buttons or coins for the diminutive creatures to take.

Historians assert that this traditional offering goes back to the pagan rites of making human sacrifices to the much larger true dragons.



Once believed to be a member of the Mantis family, it was later discovered that feydragons were actually in the *Dragonica* class and not *Insectia*. The praying mantis can be a fierce rival to the feydragon.

## DEMONSTRATION

# MONARCH FEYDRAGON

When approaching an image of the feydragon, it's important to design a composition that will show the animal's best qualities. Incorporating all of these aspects will make the illustration more interesting. Consider: Where does your feydragon live? How big is it? What color is it? Each of these aspects is important when coming up with a design. List these qualities so that you will not forget them, as I have done here:

- Small size
- Brightly colored
- Lives among the flowers
- Has four wings
- Collects shiny objects



### 1 Complete Preliminary Thumbnail Sketches

Draw quick thumbnail sketches like these to establish your layout and composition. As you can see here, I had initially thought to place the feydragon on a watering can before settling on the basket.

### 2 Do the Final Drawing

Using your thumbnail sketches as a reference, do the final drawing of the feydragon on bristol board with an HB pencil. For the garden setting, I used reference photos of foxgloves. Scan the drawing.







**3 Establish the Underpainting**  
Create a new layer in Multiply mode. Block in the underpainting using different values of olive green. Establish the lighting and forms; save details for later.

Notice that I repositioned the end of the tail to rest in front of the upper area of the tail. This will help contrast the bright light of the end of the tail with the tail itself, making the end appear to glow.



**4 Add Color**  
Block in the basic colors on a new semiopaque layer in Normal mode. Begin with the background elements before moving onto the dragon itself. This garden scene will create crucial backdrop for the painting, producing a green textured "curtain" that will contrast against the oranges of the feydragon. The details in the background do not need to be precise; just creating the impression of flowers in the background are all that's needed here.



**5 Refine the Colors**  
Create a new semiopaque layer. Establish the basic color palette of the feydragon in broad strokes using semitransparent brushes. Precision here is not important; working from the general to the specific is going to make changes at these important stages easier now than later in the painting.



**6 Add Details**  
Add final colors and details on a series of new layers. This is the time-consuming part, but it's worth it. Use small brushes, opaque paint and brighter colors to flesh out the details that will make this feydragon come to life. Add light golden areas to parts of the wing where the light shines through it. This will make the wing look transparent.



#### The Middle Ground

1. Use hard, transparent brushes to establish the grass.
2. With smaller brushes and a darker color, refine the grass's shadows.
3. Using a semiopaque green, add some brighter color for interest and depth. Add some yellow to indicate the ground.
4. With small, opaque brushes, add the flowers.
5. Refine the details with your smallest brushes.



#### 7 Add the Finishing Touches

With small opaque brushes, make any final adjustments to the painting such as the deep shadows in the basket and the highlights on the wings.



# HYDRA

*Draco hydridae*

## SPECIFICATIONS



**Size:** 30' (9m)

**Wingspan:** None

**Recognition:** Serpentine body with multiple heads; markings vary by species

**Habitat:** Temperate to tropical climate, waterways and wetlands

**Known species:** European bull hydra (Rhone hydra), Lernaen hydra, Japanese hydra (*Yamata-no-orochi*), naga (Indian hydra), Northern bull hydra, cerebrus hydra, medusan hydra, winged hydra



**European Bull Hydra**

Pencil and digital

14" x 22" (36cm x 56cm)



## BIOLOGY

By far the most unusual family in the Dragonia class, the hydra is an order of dragon consisting of families and species that possess multiple serpentine necks and heads known as *Hydradraciformes*. The hydra is born with only two heads, and as the creature grows in size, it sprouts new heads that allow it to feed more effectively. If heads are damaged or destroyed, new heads are capable of growing back. The image of heads sprouting back like magic is an exaggeration; rather, a new hydra head usually takes one year to grow in. The hydra's habitat is located around bodies of water, where its many heads are used to hunt fish and small game.

The Lernaen hydra is much smaller, only 10' to 20' (3m to 6m), and has no legs, a serpentine body and is often referred to as a wyrm (see pages 136–145), but is actually in the *Hydridae* family.

*Yamata-no-oroichi*, or Japanese hydra, along with the Indian hydra, or naga, live by the sea, hunting shellfish in saltwater tidal flats and up rivers.

The cerebrus hydra is a smaller species, usually confused with a drake (see pages 90–99) or even a canine, but is, in fact, a hydra. It hunts small game



**Hydra Egg, 10" (25cm)**

Hydra do not care for their young. They lay a small clutch of eggs and abandon them to their fate. Hydra hatchlings will often kill one another looking for food. This harsh parenting and childhood accounts for the scarcity of hydra.

**European Bull Hydra**  
*Hydrus rhonus*, 30' (9m)





in open grasslands, and is often captured to be used as a guard animal. Tethered near a portal or gate, its three heads are always alert, and unlike the other hydra species, it is able to growl and bark like a hound to alert the inhabitants. The cerebrus is unique in that it is born with three heads and is unable to grow in new ones.

The aero hydra, or winged hydra, has never been documented and it is considered unlikely that such an ungainly creature as the hydra would ever function in the air. Yet, hydra specialists are constantly on the lookout for the elusive winged hydra.



#### **The Heads of the Hydra**

The hydra lives in deep murky swamps and has terrible eyesight. Often hunting at night in order to catch its prey, the head is equipped with long tendril-like whiskers that it uses to sense the environment around it.



#### **Hydra Feet**

The soft muddy ground of the hydra's habitat requires a broad, flat webbed foot to support the bulky creature's massive weight. Its sturdy claws are used to overturn logs and rocks, looking for shellfish and small animal burrows.



## ADDITIONAL MEMBERS OF THE HYDRA FAMILY

The hydra family is one of the most unusual and diverse members of the Dragonia class.

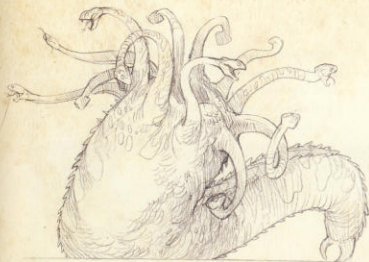
### **Medusan Hydra** (right)

*Hydrus medusus*, 10' (3m)  
The medusan hydra lives in swamps and tidal basins where it burrows itself into the mud, concealing its large body. The heads enable it to catch eel, crawfish and small animals as they pass by.



### **Lernaen Hydra**

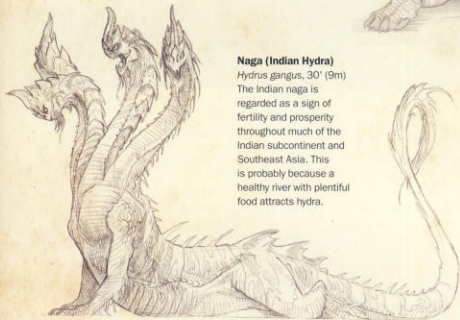
*Hydrus lernaeus*, 20' (6m)  
The Lernaen hydra lives in the boughs of trees, allowing its heads to drape down catching small rodents, fish and birds.



#### **Naga (Indian Hydra)**

*Hydrus gangus*, 30' (9m)

The Indian naga is regarded as a sign of fertility and prosperity throughout much of the Indian subcontinent and Southeast Asia. This is probably because a healthy river with plentiful food attracts hydra.



#### **Cerebrus Hydra**

*Hydrus cerebrus*, 10' (3m)

Although sometimes believed to be in the drake family, the cerebrus hydra has a history, going back to classical antiquity. Born with three heads and never growing more, the cerebrus is an agile hunter. Since one of its heads is always awake, the cerebrus is often domesticated as a guard or a ratter.



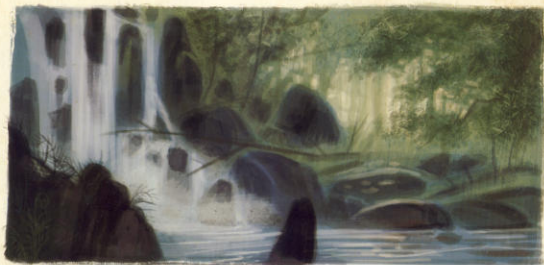


## BEHAVIOR

Hunted with extreme prejudice since ancient times to protect people and livestock, the hydra has disappeared from its classical habitats such as the Nile River Delta, and the Mediterranean islands. Larger specimens are known to attack livestock, but usually the hydra is an angler, hunting easy prey that comes within the grasp of its tentacle-like necks. The large, bulky body is armored to protect against other predators such as crocodiles, but this makes the hydra a ponderous animal that may not move from its lair for weeks.

The hydra is notoriously unintelligent, with the individual brains of each head being minuscule in caparison to their body size. The heads are capable of autonomous

actions, allowing some heads to rest while others continue feeding, allowing the hydra to sustain itself. The hydra will attack anything that moves within the path of its heads as it lays in wait along riverbanks and inland seas. It has been



### Hydra Habitat

Most commonly found making its dens near large rivers around the world, the hydra has become an endangered creature as much of its habitat has been destroyed by development of human settlements, and the construction of dams.

### Hydra in the Process of Eating

With multiple heads all striking with lightning speed, the hydra is able to consume the necessary food to sustain its large body.



observed that hydra heads will often fight one another, resulting in injury, or the death of one of the heads.

In the winter months the Northern bull hydra will burrow underground and hibernate, while the subtropical and tropical Lernaen hydra, naga and Japanese hydra remain active year round.



#### Swimming Hydra

Despite being ungainly on land, hydra are excellent swimmers. Moving around their territory requires frequent river crossings. The hollow bones common to all dragons make them extremely buoyant.

## HISTORY

The hydra is one of the most commonly depicted dragons in art history and is ubiquitous in almost all cultures. The hydra has been depicted thousands of times in Grecian urns, classical mosaics, Islamic scrolls and sculpture, Buddhist murals, and medieval illuminated manuscripts, paintings and engravings.

The Lernaen hydra is most famous for its classical battle against Hercules, but there are other accounts of multiheaded dragons. In Japanese mythology, the sea god Susanoo battles an eight-headed hydra by getting it drunk on sake. In India, the god Vishnu dances on the head of a naga. In the Christian faith, the famous seven-headed beast of the apocalypse is assumed to be inspired by the European bull hydra.

#### Depictions of Winged Hydras Are Common

This woodblock engraving by Albrecht Dürer shows the seven-headed beast of the apocalypse depicted as a winged hydra.



## DEMONSTRATION

# EUROPEAN BULL HYDRA

Painting a hydra is a complicated undertaking. The intertwining heads and necks all need to behave as a unit, as well as individually. The more heads you create, the more complicated the design becomes.

Once you have done all of the preliminary concept design work on your hydra, create a finished painting that communicates all of the ideas you have developed. In this example, create a short list of hydra qualities you need to include:

- Multiple heads
- River habitat
- Armored body



### 1 Create Thumbnail Sketches

Complete rough thumbnail designs of the painting to experiment with the layout of the painting. Figure out the arrangement of the many heads and necks and how they're attached to the body.



### 2 Draw the Composition

Using an HB pencil, complete a detailed rendering that includes all of the necessary details for the painting. Scan the drawing.





### 3 Establish the Underpainting

Create a new layer in Multiply mode for the underpainting. Using transparent brushes and different values of green, block in the lights and darks to establish shape and form.



### 4 Complete the Underpainting

Continue the underpainting stage, using smaller brushes and deeper contrasts until you've established most of the details and lighting.





## 5 Add Color

Using semiopaque brushes and broad strokes, block in the colors of all of the objects in the painting. Don't worry about neatness at this stage; just focus on establishing the local color of the objects. Most of this information will be worked over in later stages in new layers.

### *Artist's Note*

Local color is the actual color of an object before it's affected by atmospheric conditions such as haze. For instance, the local color of a lemon is yellow; however, when seen at a distance or when seen at evening, the lemon will appear less vividly yellow. Once you've established the local color of a painting, you can then alter the colors and details from there.

## 6 Refine the Background and Details

Working on the background first, use opaque paint in more detail, refining the image carefully with smaller brushes. Allow the previous work to show through where you can because the areas in more detail will appear to come forward. The areas of the composition that are less defined will seem to recede.







## 7 Add Detail to the Lower Hydra Head

Even though this head of the hydra is lower than the others, it's important to refine the details with small brushes and opaque color since it's in the foreground.



## 8 Refine the Other Hydra Heads

The lighter colors used on these heads draw the viewer's attention. The red color of the flesh the two heads are fighting over also helps draw the viewer's eye to this area since red is a complementary color of green.

## 9 Refine the Hydra Background

Keep the textures and edges of the background soft to contrast against the crisp edges and strong contrast of the hydra.



- 10 Add the Finishing Touches**  
Using the smallest brushes and opaque color, refine any areas of the painting that need touching up.



# SEA ORC

*Draco orcadraciforme*







**Faerie Seaorc**

Pencil and digital

14" x 22" (36cm x 56cm)

**SPECIFICATIONS**



**Size:** 10' to 300' (3m to 91m)

**Wingspan:** None

**Recognition:** Serpentine body with finlike appendages. Wide range of species and forms

**Habitat:** Deep seas and lakes of the world

**Families:** *Cetusidae*, *Draconguillidae*

**Species:** Scottish sea orc, sea serpent, Yangtze orc, striped sea dragon, faerie sea orc, hammerhead sea dragon, sea tiger, sea leopard, frilled sea orc, sea lion, electric sea orc

**Also known as:** Leviathan, sea serpent, sea dragon

## BIOLOGY

Evolving from the land species of dragons millions of years ago, the sea orc exists in two family groups: The *Dracangullidae* (dragon eel), a snakelike species that have been reputed to grow to titanic lengths in excess of 300' (91m), and the *Cetusidae* (sea lion), a smaller, more terrestrial family, growing to 50' (15m).

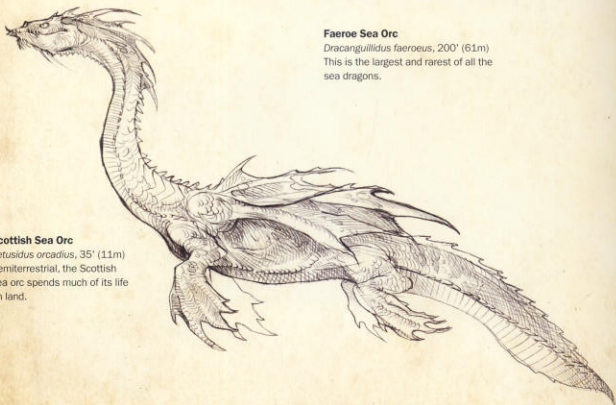
Since seventy-five percent of the surface of the earth is water, sea orcs are the most varied and numerous of the draconia class of animals. Dozens of species have been

documented, others are nearly extinct and still today rare species have never been seen. Primarily feeding on fish, seals, shellfish and other sea creatures, all sea orcs must return to the surface to breathe. Once a year, the female sea orc crawls to shore, or into the shallows, to lay her eggs. This vulnerable time is responsible the majority of fatalities to both adults and young. Orclings are tiny when born, but quickly grow to adulthood.



**Faeroe Sea Orc**

*Dracangullidus faeroeus*, 200' (61m)  
This is the largest and rarest of all the sea dragons.



**Scottish Sea Orc**

*Cetusidus orcadus*, 35' (11m)  
Semiterrestrial, the Scottish sea orc spends much of its life on land.



#### Sea Lion

*Cetusidus leodracus*, 15' (5m)

The sea lion (and its cousins the sea tiger and sea leopard) travel in packs, hunting seals and small cetaceans.



#### Sea Orcs Have Webbed Claws

Similar to marine mammals, marine dragons have evolved limbs specialized for swimming.



#### Striped Sea Dragon

*Dracangulidus marivenatorus*, 25' (8m)

Fast and predatory, this sea orc is popular among those who fish for sport.



## BEHAVIOR

The habitat of the Atlantic faeroe sea orc ranges in the northern waters, stretching from Cape Cod, Massachusetts, to the Irish Sea and Fjords of Norway. In the winter, the sea orc migrates south to take up its hunting grounds in the Bahamas. The saltwater variety of sea orcs has been reported to have attacked ships, plying the northern sea lanes since the fifteenth century. Some accounts of sea orc attacks in the southern Atlantic have been accredited to the mystical disappearance of ships in the Bermuda Triangle. Today the Atlantic faeroe sea orc is a rare find, having been hunted to near extinction throughout the nineteenth and twentieth centuries.

It is now protected as an endangered species. Able to dive to tremendous depths, sea orcs are the natural enemies of the giant squid, sperm whales and large sharks.



### Orcing

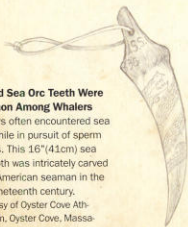
Although there are no species of sea orc alive in captivity, marine biologists have studied them for centuries. This faeroe sea orc orcling is 36" (91cm) and was caught off the Canary Islands in 1927.

Courtesy of Vanderhaute Oceanographic Institute, Center harbor, New York.



### Sea Orc Nesting Grounds

The sandy beaches of the oceans are the common nesting grounds of the sea orc.



### Carved Sea Orc Teeth Were Common Among Whalers

Whalers often encountered sea orcs while in pursuit of sperm whales. This 16"(41cm) sea orc tooth was intricately carved by an American seaman in the late nineteenth century.

Courtesy of Oyster Cove Athenaeum, Oyster Cove, Massachusetts

### Artist's Note

Imagining different species of sea dragons allows for a wide array of creatures to be designed. With over forty different species of whales, more than three hundred species of sharks and no less than twenty-eight thousand species of fishes, add to this number the extinct species of marine dinosaurs and plated fish and you can begin to try to imagine how many kinds of sea dragons might exist.

## HISTORY



In this illustration by Gustave Dore, done in 1880, the hero Orlando saves Olympia from being sacrificed to a sea orc.

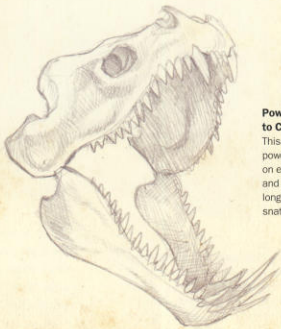
The word *orc* comes from the Latin *orcus*, which means both whale and underworld. This is where the killer whale gets its name orca. It is not in fact a goblin-like monster. The most famous sea orc is, of course, the Loch Ness monster which is a Scottish sea orc. A similar account of the Scottish sea orc is in the epic poem *Orlando Furioso*, by Ariosto, where maidens Angelica and Olympia were to be sacrificed to a sea orc in the Isle of Skye in Scotland. The creature was stopped by the hero Orlando when he wedged a ship's anchor into the creature's mouth. Although some marine biologists suggest that the famous kraken of ancient mythology was a sea orc, it is believed that the kraken was, in fact, a giant squid. Leviathan is also often mistaken to be a sea orc, but it is believed that that titanic animal is actually a cetacean.

The largest specimen of a saltwater sea orc is at the British Maritime Institute in Bangor, Wales. This 225' (69m) specimen was killed in the Irish Sea by the frigate HMS *Pertinacious* in 1787.



### Faeroe Sea Orc Egg, 6" (15cm)

A sea orc clutch usually consists of twenty eggs. Once born, the tiny orclings will race to the sea for safety.



### Powerful Jaws Allow Sea Orcs to Consume Massive Prey

This skull shows how this powerful animal can easily feed on even the largest whales and squids in the oceans. The long interlocking teeth allow for snatching at fish.

## DEMONSTRATION

# FAEROE SEA ORC

When approaching a painting of a creature as powerful and fearsome as a sea orc, there are several elements of the design that will need to be illustrated. In the case of the massive faeroe sea orc, the following qualities are important, and need to be included in the illustration:

- Underwater habitat
- Swift, eellike movement
- Large mouth for catching prey
- Iridescent coloration

In this illustration, I am drawing inspiration from a host of large predatory fish, such as sharks, eels, barracuda and sailfish. All of these animals attack their prey with lightning speed in the deep water.



### 1 Thumbnail Design

Using the reference of other animals such as eels, begin your illustration with a thumbnail sketch. Try to incorporate all of the elements listed into this one illustration.



### 2 Complete the Finished Drawing

Using an HB pencil, complete a detailed rendering that includes all of the necessary details for the painting. Scan the drawing.

### Artist's Note

When trying to depict movement, always show the shapes looping back on themselves. Whether this is cloth, rope, or a serpent, a looping shape is far more suggestive of undulation than a stiff, straight line.





### 3 Establish the Underpainting

In a new layer in Multiply mode, begin the underpainting by roughly blocking in the shapes to quickly establish the silhouette of the composition. Also establish the lights and shadows at this point. Here, the light is coming from above and will strike the shiny scales towards the top.



### 4 Complete the Underpainting

Using transparent brushes, complete the underpainting, outlining all of the details of the creature. Add more details to the areas you want to appear to come forward and keep the background details less defined. With smaller brushes, add patterns to the scales and refine the facial features.



## 5 Add Color

Using broad strokes and general shapes, rough in the color scheme on a new semi-transparent layer over the underpainting. Touch up the swordfish the sea orc is chasing. Bring in some greens and light browns for the scales in the front and middle sections of the sea orc. These colors will contrast against the light blue underbelly and make it appear shimmering. With small brushes, color the eyes and teeth using yellows and reds.



## 6 Refine the Background

To enhance the large size and sense of movement, recede the tail of the sea orc into the murky water so the sharp detail of the head is in stark contrast to the softness of the tail. This optical illusion is an effective way of foreshortening such a long creature without losing the impact of its size.

Bring in some of the sea orc's color from step 4 into the waves using semiopaque color. Lengthen the trail of bubbles escaping from the orc's mouth to enhance the appearance of quick movement.



#### **7 Add Details**

Starting in the background and slowly working forward, carefully add the highlights of the sea orc. Take your time at this stage; the details are what will make the image convincing. Pay special attention to the middle section of the sea orc's body. Punch up the contrast between the blue and gray color in this area and use small semiopaque brushes to refine each of the scales.



## 8 Refine the Head and Mouth

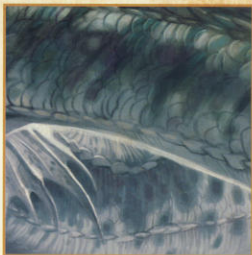
With your smallest brushes and opaque color, refine the sea orc's face and mouth. Carefully add shadows and highlights to the scales surrounding the face. Then sharpen color and detail of the eyes, mouth and teeth.





## 9 Refine the Front Scales

Add a brighter blue and a light highlight along the front of the sea orc's body. This highlight will make the scales appear to shimmer and will help define the orc's form.



## 10 Adjust the Middle Scales

Lighten the scales toward the middle and back of the orc's body. This will help the front section of the body stand out even more.



## 11 Alter the Background Fish and Add the Final Touches

Using the smallest brushes and opaque color, refine any areas of the painting that need touching up. I didn't like the look of the swordfish, so I created a new layer in Normal mode with an opacity setting of 100%. I then created the new fish design directly over the earlier version.

# WYRM

*Draco ouroboridae*



**American Banyan Wurm**

Pencil and digital

14" x 22" (36cm x 56cm)





## SPECIFICATIONS



**Size:** 50' (15m)

**Wingspan:** None

**Recognition:** Scaled snake-like body. Camouflage patterning varies by species

**Habitat:** Temperate to tropical climates, especially lowlands and wetlands

**Species:** African striped wyrm, American banyan wyrm, Asian marsh wyrm, European lindwurm, Indian drakon

**Also known as:** Worm, serpent, lindwurm, lyndwurm, lindworm, wurm, worm king, ouroborus, drakon, drakonne

## BIOLOGY

One of the most infamous families in the dragon class, the wyrm has been perhaps the most feared creature throughout all human cultures. The wyrm is distinguished by both its lack of wings and legs, although the lindwyrn species do have small vestigial legs. Looking much like an armored snake, wyrms can reach tremendous sizes of more than 50' (15m), although the average wyrm only reaches 25' (8m) due to harsh hunting practices that have cut down

their populations drastically. Natural enemies of alligators, crocodiles and hydra, wyrms live along swampy riverbanks and saltwater tidal basins, hunting large animals such as boar and deer. Although not able to breathe fire, the wyrm is able to spray a cloud of misted poison that can paralyze and blind its prey, allowing the animal to swallow its quarry whole.



### European Lindwyrn

*Ouroboroides pedeviperus*, 25' (8m)  
Nearly extinct in much of Europe, as their habitat and food supply has disappeared, several species of lindwyrn are now protected animals.



### American Banyan Wyrn

*Ouroboroides americanus*, 50' (15m)



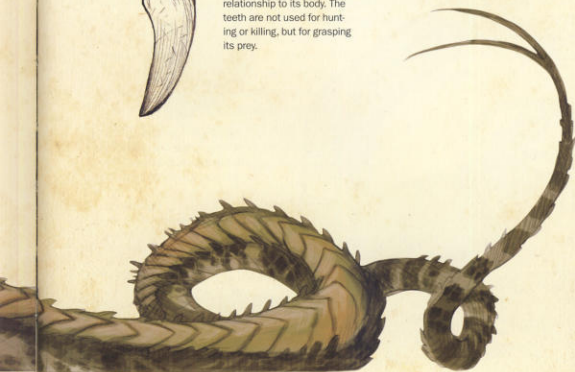
#### **Wyrm Tooth, 3" (8cm)**

The wyrm has small teeth in relationship to its body. The teeth are not used for hunting or killing, but for grasping its prey.

#### **Wyrm Head and Mouth**

The large mouth of the wyrm allows the maw to be opened wide enough to swallow its prey whole. The long snout, which contains a large nasal cavity along with the sensitive tongue, gives the wyrm an excellent sense of smell, but small eyes give it poor vision.

The poisonous mist emitted by the wyrm has been used as a sacred drink by many ancient cultures, creating hallucinogenic visions in those who consume it.





## BEHAVIOR

The wyrm is a solitary and viciously territorial animal that makes its lairs under the roots of large trees along rivers and lakes. Lying in wait for prey to come to the water to feed, the wyrm sprays a plume of noxious gas that paralyzes or dazes its prey, giving the wyrm time to capture and coil around the animal. Using its powerful body muscles, the wyrm constricts around its prey, suffocating and crushing the animal to death. The wyrm then typically swallows its prey whole. The eastern species of wyrm typically hide in the trees branches and dangle down waiting for prey to pass by. Large specimens of wyrm have been discovered with the remains of cattle in their stomachs. One report actually claims that an Indian drakon (*Ouroboridus marikeshus*) was discovered at more than 100' (30m) and contained the remains of an elephant.



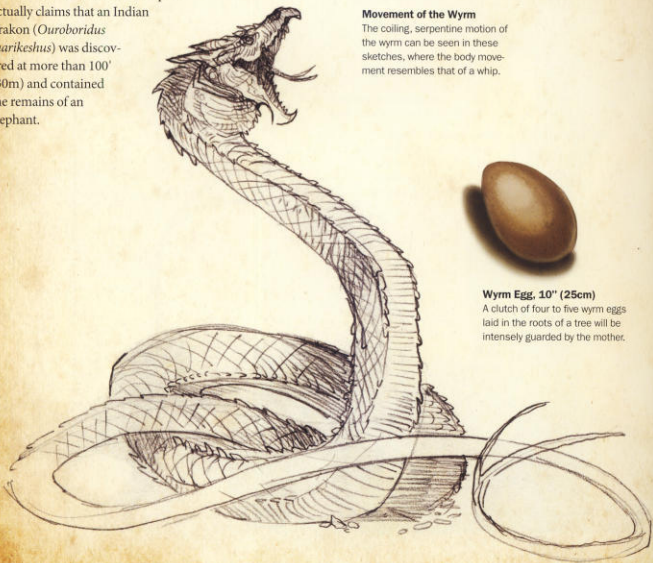
### Movement of the Wyrn

The coiling, serpentine motion of the wyrn can be seen in these sketches, where the body movement resembles that of a whip.



### Wyrn Egg, 10" (25cm)

A clutch of four to five wyrn eggs laid in the roots of a tree will be intensely guarded by the mother.





#### Worm Habitat

Wyrmms tend to live in temperate to tropical climates, especially in lowlands and wetlands where they lie in wait for their prey.

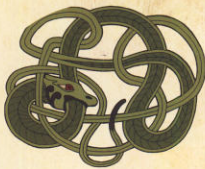
## HISTORY

Almost every culture in the world has a long mythological history of giant serpents. The famous accounts of Python, who was slain by Apollo in classical mythology, Nidhogg of ancient Norse mythology and the serpent in the Garden of Eden are all assumed to have been wyrmms. Such creatures would have been a terrible threat to early human cultures whose survival relied upon settlements along rivers. Other fables that are accredited to wyrmms are the Questing Beast of King Arthur and the dragon that swallowed Saint

Margaret. The wyrm possesses spiritual symbolism in many ancient religions in the form of the serpent eating its own tail, or ouroboros, symbolizing infinity or the circle of life, from which is derived the wyrm's family name.

#### Ouroboros

The ouroboros was a symbol used in medieval European alchemy to illustrate the concept of infinity. It is the precursor to the infinity symbol ( $\infty$ ) used today.



#### Wyrmms and Ancient Celts

Nowhere was the serpent more revered than in Celtic art. Symbolizing the labyrinthine maze of life, the coiling circles of a Celtic knot were inspired by the wyrm. Once a fearsome foe to Irish natives, there are today no species of wyrm living on the island, said to have been driven off by Saint Patrick.

## DEMONSTRATION

# AMERICAN BANYAN WYRM

The wyrm has been depicted in many cultures throughout history. In order to capture the essence of this animal, there are certain qualities that are necessary to include in the painting. From the conceptual and historical references for the wyrm in the previous pages, it's important to try to incorporate all of these qualities into one image:

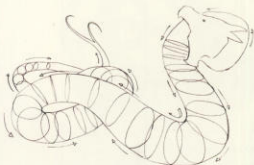
- Solitary habits
- Inhabits swampy marshes around trees
- Coils in complex circles
- Swallows its prey whole

Exploring of different kinds of scales found on snakes and lizards will help you come up with a unique yet believable pattern. Look at reference materials for the banyan trees and their leaves to get the environment accurate.



### *Working Out the Kinks*

The coiling shape of the wyrm can get confusing, so establish the structural framework with basic shapes. The form of the wyrm acts like a stretched-out Slinky.<sup>®</sup> Here you can see the angle of the internal structure and the arrows that indicate the direction all the scales need to follow.



### **1** Thumbnail Design Sketches

Beginning with compositional design sketches, experiment with several ideas for the wyrm's position and placement. I rejected these early design drawings because they didn't demonstrate the coiling power of the wyrm to the best effect. A position where the creature is rearing up and creating loops produces more drama and looks more like the infinity symbol discussed in the sidebar on page 141.



**2 Do the Final Drawing**  
Draw the composition with an HB pencil on bristol board, referring to your thumbnail sketches. As you work, keep in mind the wyrm's anatomy (refer back to the sidebar on page 142) and its directional flow. The scale pattern you use is completely up to you; I chose to draw thick, pointed, armored scales like those on a rattlesnake.



**3 Establish the Underpainting**  
In a new layer in Multiply mode, block in the basic shapes and forms using a single monochromatic color. Keep the color transparent and begin with simple shapes and develop more detail as you work. Don't work in too many details at this point, since this work is the foundation of later work to be done over this. Notice how the scale patterning is merely indicated, allowing for alterations to occur as the painting progresses.

**4 Complete the Underpainting**  
In a new layer and still using transparent colors, complete the underpainting by outlining all of the details of the wyrm. Add more details to the areas you want to appear to come forward and keep the background details less defined. With smaller brushes, add patterns to the scales and refine the facial features.

Feel free to experiment at this stage. Since you're working in a new layer, you won't damage the work done in earlier layers.



## 5 Add Color

In a new layer in Normal mode with 50% opacity and using broad strokes, block in the basic colors of the wyrm. Work loosely here since the colors will change as the painting develops. Add dappled light falling over the tree trunk and warm, golden leaves to contrast with the cool colors of the wyrm.



## 6 Refine the Background and Add Details

Working with smaller brushes and opaque color, complete the details of the wyrm. Add a turquoise blue pop against the background and refine the eyes, mouth and teeth with reds and yellows. Punch up the color and texture of the tree bark and leaves.



#### Detail of Leaves

With small brushes add highlights to the golden leaves. The complementary golden tone of the leaves will help the blue color of the wyrm stand out.



#### Detail of Reflected Light

Add cool, reflected light splashing across the back of the wyrm to give more volume and dimension to the wyrm's form.



#### Detail of Scales

Paint each scale with your smallest brushes, varying the color and pattern of the hide. Your patience will be rewarded.



#### 7 Add the Finishing Touches

Working with smaller brushes and opaque colors, complete the details of the wyrm.





# WYVERN

*Draco wyvernae*

## SPECIFICATIONS



**Size:** 30' (9m)

**Wingspan:** 30' (9m)

**Recognition:** Red eye spots on wings (male); brown and green markings (female); large, spiked club on tail

**Habitat:** Alpine and mountainous regions in the Northern Hemisphere

**Species:** Asian wyvern, European wyvern (extinct), golden wyvern, North American wyvern, sea wyvern





**North American Wyvern**

Pencil and digital  
14" x 22" (36cm x 56cm)

## BIOLOGY

By far one of the most dangerous and ferocious members of the dragon class, the wyvern is sometimes referred to as the dragon wolf.

Averaging 30' (9m) long with a 30' (9m) wingspan, the wyvern has two legs and a spiny tail surmounted by a poisonous stinger. Their durable hides of armored scales gives wyverns ample protection to fight off other predators and even larger dragons when fighting in a pack. Although the wyvern does not possess a breath weapon, his poisonous stinger, powerful body and ferocious maw of razor-sharp teeth make it a formidable foe.

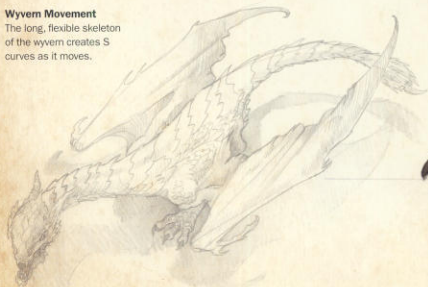
### Wyvern Egg, 12" (30cm)

The average female lays six eggs; yet, less than half of wyvern hatchlings will survive to adulthood.



### Wyvern Movement

The long, flexible skeleton of the wyvern creates S curves as it moves.



### North American Wyvern

*Wyvernus morcaudus*, 30' (9m)

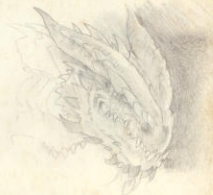






#### Wyvern Head

Powerful jaws and rows of razor-sharp teeth make the bite of a wyvern nearly always fatal.



#### Wyvern Tracks

Wyvern tracks are abundant in mountainous hunting territories. If you see them while hiking, leave the area immediately!

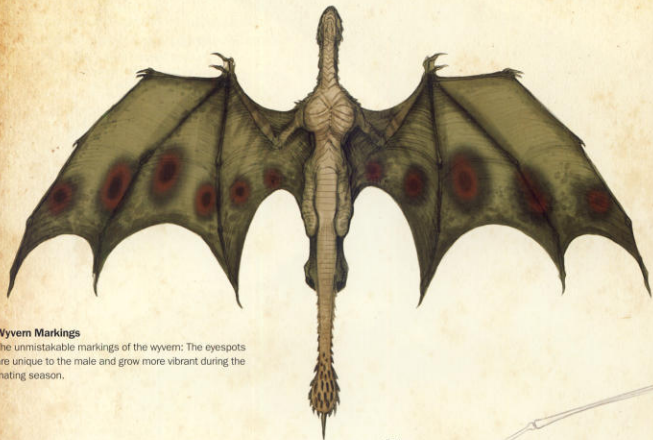


#### Wyvern Tail

The wyvern's tail is covered with spines that can be projected at an enemy, as well as a poisonous stinger capable of killing an ox.



## WYVERN FLIGHT ABILITIES



### Wyvern Markings

The unmistakable markings of the wyvern: The eyespots are unique to the male and grow more vibrant during the mating season.

The wyvern is not as graceful a flier as some of its cousins. The large tail and bulky plates make it ungainly in the air.

What the wyvern lacks in agility it makes up for with brute force and power. Hunting in packs and using its poisonous clubbed tail allow the wyvern to be the only natural enemy of the great dragon (see pages 64–77).

first  
metacarpal

second  
metacarpal

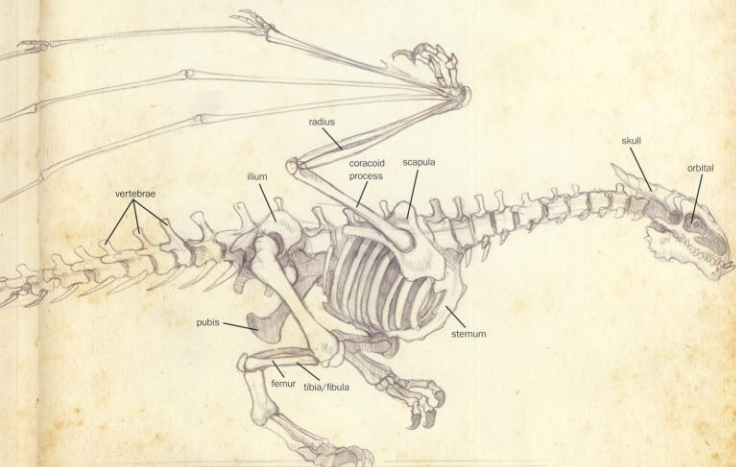
third  
metacarpal

terminus mortis

## WYVERN SKELETAL STRUCTURE

In early paleontology, dragon skeletons and dinosaur skeletons were often confused. It was not until 1913 that Dr. Francis H. Kellerman discovered that dragons, like birds, diverged from the dinosaurs some time around one hundred million years ago.

The hollow bones of the dragon were one of the key factors in the classification of all the dragon species and gives them a class of their own. Today dragons are studied around the world in universities and colleges. Close studies of predatory dragons like the wyvern are common, with many draconologists tagging species to study their migration and behavioral habits. Tourists also like to go on dragon safaris to see these dangerous and other wild creatures up close.





## BEHAVIOR

The wyvern is a social animal that lives in packs of up to twelve individuals, ranging over a territory many hundreds of miles in area. Hunting in packs allows for more successful attacks on prey, which include animals such as the moose, elk, bear, caribou and (its favorite) the dragonette. Pack society also enables the wyvern to fight off other packs of wyverns competing for hunting territory.

During the rutting season in the fall, the wyvern male wing patterning becomes vibrant in order to attract a female. The competition between males is fierce, often resulting in the death of rivals. The wyvern, like other temperate climate dragon species, hibernates through the winter when food is scarce.

### Expert Hunter

Hunting over large expanses of wilderness, the wyvern is a danger to people and their animals.



### Fearsome Fighter

Feared throughout all cultures, wyverns are ferocious fighters.



## HISTORY

The wyvern is the beast responsible for most of the injuries throughout history reported as dragon attacks. It is believed by contemporary accounts and period artwork that the beast slain by Saint George was, in fact, a wyvern and not a dragon.

The European wyvern went extinct in the 1870s. The last known specimen was placed on tour with P. T. Barnum's circus until 1898 and is now in permanent exhibit at the Chicago Museum of Natural History.

### European Wyvern

The European wyvern was a common enough sight in medieval Europe to influence the work of many of the Old Masters. *Saint George and the Dragon*, Paulo Uccello, 1456, National Gallery, London

The Asian and other wyvern species are still flourishing and many casualties are reported each year as new developments encroach upon their habitat.



### Wyvern Habitat

Wyvern habitat ranges all over the world's alpine regions. Although extinct in the Alps, the Asian wyvern is moving westward.

## DEMONSTRATION

# NORTH AMERICAN WYVERN

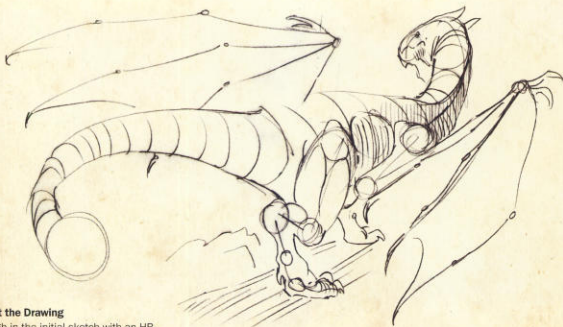
The North American wyvern's habitat is particular to the Rocky Mountains of the United States and its colorations are unique to its species. As with the other dragons in the *Dracopedia*, make a list of your wyvern's attributes that will be explored in your work before getting started:

- Two legged
- Alpine habitat
- Rugged build
- Bright wingspots on males
- Spiked and clubbed tail



### 1 Create a Thumbnail Sketch

Work out the details that will go into your finished painting by completing some thumbnail sketches. Since the wyvern's spiked tail is the most fascinating feature, place it in the foreground. The patterned wings, musculature and scales also should be showcased. Placing the animal against a backdrop of the Rocky Mountains illustrates its habitat.



### 2 Start the Drawing

Rough in the initial sketch with an HB pencil on Bristol board to determine composition and design. Keep the drawing loose so you can easily make corrections.





**3 Complete the Final Drawing**  
Complete a detailed drawing of the wyvern, paying particular attention to the texture of the wings and hide. Scan the drawing.



**4 Establish the Underpainting**  
Create a new layer in Multiply mode. Establish the basic texture, lighting and depth of the painting using the full value range of a single hue. This step will give a great deal of mass and volume to the subject. Whether you work traditionally or digitally, keep your work loose and transparent to allow the sketch to show through.



## 5 Add Color

Create a layer in Normal mode with an opacity of 50%. Continue to refine the painting, working from the back to the front. Using consecutively deeper shades of blue creates a rolling vista that disappears into the horizon, giving the illusion of great depth. Increasing the detail as the image moves closer also enhances this illusion.



## 6 Refine the Details

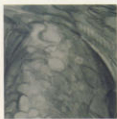
Work on the middle ground and foreground areas of the painting (see sidebar below). Contrast the rocks and flowers with the soft background by making their colors more vibrant and adding more detail. Using roughly textured brushstrokes on the rocks, along with light rocks and vibrant flowers, helps to create a sense of distance between the foreground and the hazy ridge line.

## The Hide

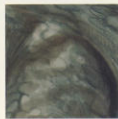
Building up the texture in layers adds depth and complexity. This technique is similar to the rendering of the flowers on page 109.



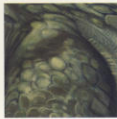
1. Complete the drawing.



2. Add the underpainting.



3. Place the colors.



4. Render the details.



**7 Apply the Finishing Touches**  
Make any last revisions, as necessary.

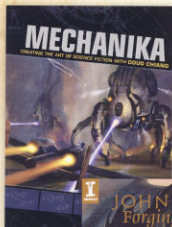


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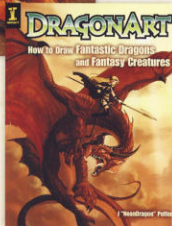
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Sea Orc (*Draco orcadraciforme*)



Drake  
(*Draco drakidae*)



Asian Dragon (*Draco cathalidae*)



Arctic Dragon (*Draco nimibiaquidae*)



Feydragon (*Draco dracimexidae*)



Wyvern (*Draco wyvernae*)

Wyrn (*Draco ouroboridae*)



## ACTUAL SIZE COMPARISON

This chart shows the actual size\*  
comparison of all the dragons.

\*The sea orc is shown at a mid-size of  
200" (61m), but can be found at an  
unbelievable 300" (91m).



Feydragon, 9"  
(23cm)



Hydra, 30' (9m)



Human, 6'  
(183cm)



Arctic Dragon,  
24' (7m)



Amphiptere, 6' (183cm)



Coatl, 10' (3m)



Asian dragon

# DRAGONS OF THE WORLD



LD

Basilisk (*Draco lapsoculidae*)



Dragon (*Draco dracorexidae*)



Amphiptere  
(*Draco  
amphipteridae*)



Dragonette  
(*Draco volucrisidae*)



Sea Orc.\* 200" (61m)



Wyvern, 30' (9m)



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